



RESEARCH REVIEW

A DIGEST OF NEW SCIENTIFIC RESEARCH
CONCERNING RELIGION, BRAIN & BEHAVIOR

MARCH, 2016

INTRODUCTION

IBCSR Research Review (IRR) is published by the Institute for the Bio-Cultural Study of Religion, a non-profit research institute dedicated to the scientific study of religion using biocultural techniques. *IRR* briefly annotates and furnishes online information about scientific research articles related to brain, behavior, culture, medicine, and religion published in English in leading journals. It also lists relevant books. Articles in press are listed without annotation. Annotations for articles aim to supply a preliminary understanding of the methods and results of a research study, or the argument of a paper. Annotations typically furnish more detail for articles in the scientific study of religion related to religion, brain, and behavior, than for articles in the area of spirituality and health, in accordance with IBCSR research priorities.

Articles for this issue were located by searching the following databases: H. W. Wilson Applied Science and Technology, H. W. Wilson General Science, PubMed, EBSCO Psychology and Behavioral Sciences Collection, PsycARTICLES, PsycINFO, ScienceDirect, and Web of Science. The search terms were altruism, god, goddess, meditat*, prayer, relig*, ritual, spiritu*, and yoga, tailored to the database being searched. Books were located on Amazon.com. Articles not directly relevant to the scientific study of religion were excluded, as were correspondence and reviews. From a universe of 1,293 articles, 132 articles have been retained from 67 journals. There are 83 pre-publication citations from 58 journals.

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PART 1: ARTICLES IN RELIGION, BRAIN, AND BEHAVIOR

1.1 SCIENTIFIC STUDY OF RELIGION: COGNITIVE NEUROSCIENCE

Elias Hernandez, Sergio, Jose Suero, Alfonso Barros, Jose Luis Gonzalez-Mora & Katya Rubia. 2016. Increased Grey Matter Associated with Long-Term Sahaja Yoga Meditation: A Voxel-Based Morphometry Study. *Plos One* 11(3). e0150757.
doi:10.1371/journal.pone.0150757.

The objective for this study was to investigate regional differences in grey matter volume associated with the practice of Sahaja Yoga Meditation. Experienced practitioners of Sahaja Yoga Meditation (n=23) and non-meditators matched on age, gender and education level (n=23), were scanned using structural Magnetic Resonance Imaging and their grey matter volume were compared using Voxel-Based Morphometry. Grey matter volume was larger in meditators relative to non-meditators across the whole brain. In addition, grey matter volume was larger in several predominantly right hemispheric regions: in insula, ventromedial orbitofrontal cortex, inferior temporal and parietal cortices as well as in left ventrolateral prefrontal cortex and left insula. No areas with larger grey matter volume were found in non-meditators relative to meditators. The authors conclude that long-term practice of Sahaja Yoga Meditation is associated with larger grey matter volume overall, and with regional enlargement in several right hemispheric cortical and subcortical brain regions that are associated with sustained attention, self-control, compassion and interoceptive perception. The increased grey matter volume in these attention and self-control mediating regions suggests use-dependent enlargement with regular practice of this meditation.

Gao, Junling, Jicong Fan, Bonnie Wai Yan Wu, Zhiguo Zhang, Chunqi Chang, Yeung-Sam Hung, Peter Chin Wan Fung & Hin Hung Sik. 2016. Entrainment of chaotic activities in brain and heart during MBSR mindfulness training. *Neuroscience Letters* 616. 218–223.
doi:10.1016/j.neulet.2016.01.001.

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The activities of the brain and the heart are dynamic, chaotic, and possibly intrinsically coordinated. This study aims to investigate the effect of Mindfulness-Based Stress Reduction (MBSR) program on the chaoticity of electronic activities of the brain and the heart, and to explore their potential correlation. Electroencephalogram (EEG) and electrocardiogram (ECG) were recorded at the beginning of an 8-week standard MBSR training course and after the course. EEG spectrum analysis was carried out, wavelet entropies (WE) of EEG (together with reconstructed cortical sources) and heart rate were calculated, and their correlation was investigated. RESEARCHERS found enhancement of EEG power of alpha and beta waves and lowering of delta waves power during MBSR training state as compared to normal resting state. Wavelet entropy analysis indicated that MBSR mindfulness meditation could reduce the chaotic activities of both EEG and heart rate as a change of state. However, longitudinal change of trait may need more long-term training. This data demonstrated that the chaotic activities of the brain and the heart became more coordinated during MBSR training, suggesting that mindfulness training may increase the entrainment between mind and body.

Holbrook, Colin, Keise Izuma, Choi Deblieck, Daniel M. T. Fessler & Marco Iacoboni. 2016. Neuromodulation of group prejudice and religious belief. *Social Cognitive and Affective Neuroscience* 11(3). 387–394.

doi:10.1093/scan/nsv107.

People cleave to ideological convictions with greater intensity in the aftermath of threat. The posterior medial frontal cortex (pmMFC) plays a key role in both detecting discrepancies between desired and current conditions and adjusting subsequent behavior to resolve such conflicts. Building on prior literature examining the role of the pmMFC in shifts in relatively low-level decision processes, these researchers demonstrate that the pmMFC mediates adjustments in adherence to political and religious ideologies. The researchers presented participants with a reminder of death and a critique of their in-group ostensibly written by a member of an out-group, then experimentally decreased both avowed belief in God and out-group derogation by downregulating pmMFC activity via transcranial magnetic stimulation. The results provide the first evidence that group prejudice and religious belief are susceptible to targeted neuromodulation, and point to a shared cognitive mechanism underlying concrete and abstract decision processes. The authors discuss the implications of these findings for further research characterizing the cognitive and affective mechanisms at play.

Modestino, Edward J., Partrick O'Toole & AnnaMarie Reinhofer. 2016. Experiential and Doctrinal Religious Knowledge Categorization in Parkinson's Disease: Behavioral and Brain Correlates. *Frontiers in Human Neuroscience* 10. 113.

doi:10.3389/fnhum.2016.00113.

Recent studies suggest changes in religious cognition in a subgroup of patients with Parkinson's disease (PD). It is unclear whether this deficit extends to both doctrinal and experiential categorization forms of religious cognition. Kapogiannis et al. (2009b) dissociated experiential and doctrinal religious knowledge to different neural networks using fMRI. The present researchers examined Kapogiannis' dissociation against the background of PD side of onset (LOPD, ROPD), assessing performance both On- and Off-medication. In the behavioral portion of the study, the researchers used a statement classification task in combination with scholar derived test sets for experiential and doctrinal religious knowledge categorization in conjunction with neuropsychological measures. In the neuroimaging portion of the study, the research team expanded on Kapogiannis' study by examining the same networks in PD. The behavioral data revealed that all groups rated (categorized) the scholar derived tests of experiential and doctrinal significantly differently than the scholars. All groups, including the scholars, classified more phrases as doctrinal than experiential. Religious cognition differed in the PD groups: those with PD Off-medication and LOPD Off-medication comprehended scholar defined experiential phrases with more difficulty, making them more likely to be classified as mixed or doctrinal. This was in contrast to the subjective frequency of classification of phrases as experiential paired with a cognitive decline in PD Off-medication; whereas PD On-medication showed a positive correlation with cognitive state and subjective doctrinal classification. For ROPD, cognitive state was associated with

subjective experiential and doctrinal frequency of classification. With more intact intellect, there was a greater likelihood of classifying phrases subjectively as mixed, and the converse for experiential. Furthermore, religiosity negatively predicted subjective doctrinal frequency in LOPD, with the converse in ROPD. In fMRI in PD, it was found that resting state functional intrinsic connectivity of reward networks is associated with classification of statements using seeds in bilateral nucleus accumbens in PD. For experiential regressors, there was a negative correlation in bilateral frontal lobes paired with a positive correlation in left occipital visual areas. For doctrinal regressors, there was a positive correlation in right BA 20.

Sanger, Kevanne Louise & Dusana Dorjee. 2016. Mindfulness training with adolescents enhances metacognition and the inhibition of irrelevant stimuli: Evidence from event-related brain potentials. *Trends in Neuroscience and Education* 5(1). 1–11.
doi:10.1016/j.tine.2016.01.001.

With the increased interest in school-based mindfulness interventions, there have been repeated calls to investigate neurodevelopmental markers of change. This non-randomized study of 16-18 year olds with wait-list control group examined possible enhancements to brain indexes of attention processing after school-based mindfulness training using event-related potentials (ERPs) (n=47 for self-report; n=40 for ERPs). Results showed significantly more negative N2 amplitudes after training, in response to irrelevant frequent stimuli and color-deviant non-target oddball stimuli in a visual oddball paradigm. Improvements in negative thought controllability were associated with more negative N2 amplitudes post training across groups, and mindfulness training was associated with reductions in students' hypercritical self-beliefs. There were no group differences on task performance, but regression analysis indicated that program satisfaction explained 16% of the variance in improved target accuracy. Together these results suggest that a school-based mindfulness curriculum can enhance older adolescents' task-relevant inhibitory control of attention and perceived mental competency.

Tomljenović, Helena, Dražen Begić & Zora Maštrović. 2016. Changes in trait brainwave power and coherence, state and trait anxiety after three-month transcendental meditation (TM) practice. *Psychiatria Danubina* 28(1). 63–72.

The amount of studies showing different benefits of practicing meditation is growing. EEG brainwave patterns objectively reflect both the cognitive processes and objects of meditation. This study aimed to examine the effects of transcendental meditation (TM) practice on baseline EEG brainwave patterns (outside of meditation) and to examine whether TM reduces state and trait anxiety. Standard EEG recordings were conducted on volunteer participants (n=12), all students or younger employed people, before and after a three-month meditation training. Artifact-free 100-second epochs were selected and analyzed by Fast Fourier Transformation (FFT) analysis. Changes in EEG patterns after meditation practice were found mostly in the theta band. An interaction effect was found on the left hemisphere. Theta power decreased on the left, but not on the right hemisphere. Increased theta coherence was found overall and in the central, temporal and occipital areas. Decrease in alpha power was found on channels T3, O1 and O2. An interaction effect was found in the delta frequency band, too. A trend for power decreasing was found on the left, and a trend for power increasing on the right hemisphere. Also, power decreased on channel O1. In the beta frequency band, a decrease was found on channel O2. Trait anxiety did not differ, but a decrease in state anxiety and cognitive worry was found.

Zeidan, Fadel, Adrienne L. Adler-Neal, Rebecca E. Wells, Emily Stagnaro, Lisa M. May, James C. Eisenach, John G. McHaffie & Robert C. Coghill. 2016. Mindfulness-Meditation-Based Pain Relief Is Not Mediated by Endogenous Opioids. *Journal of Neuroscience* 36(11). 3391–3397.
doi:10.1523/jneurosci.4328-15.2016.

Mindfulness meditation, a cognitive practice premised on sustaining nonjudgmental awareness of arising sensory events, reliably attenuates pain. Mindfulness meditation activates multiple brain regions that contain a high expression of opioid receptors. However, it is unknown whether mindfulness-meditation-based analgesia is mediated

by endogenous opioids. The present double-blind, randomized study examined behavioral pain responses in healthy human volunteers during mindfulness meditation and a nonmanipulation control condition in response to noxious heat and intravenous administration of the opioid antagonist naloxone or saline placebo. Meditation during saline infusion significantly reduced pain intensity and unpleasantness ratings when compared to the control + saline group. However, naloxone infusion failed to reverse meditation-induced analgesia. There were no significant differences in pain intensity or pain unpleasantness reductions between the meditation + naloxone and the meditation + saline groups. Furthermore, mindfulness meditation during naloxone produced significantly greater reductions in pain intensity and unpleasantness than the control groups. These findings demonstrate that mindfulness meditation does not rely on endogenous opioidergic mechanisms to reduce pain.

1.2 SCIENTIFIC STUDY OF RELIGION: EVOLUTION

Atran, Scott. 2016. Moralizing religions: Prosocial or a privilege of wealth? *Behavioral and Brain Sciences* 39.

doi:10.1017/S0140525X15000321.

(A commentary on Norenzayan, et al., below.) Today's major religions are moralizing religions that encourage material sacrifice for spiritual rewards. A key issue is whether moralizing religions gradually evolved over several millennia to enable cooperation among genetic strangers in the spiraling competition between increasingly large groups occupying Eurasia's middle latitudes, or whether they emerged only with the onset of the Axial Age, about 2,500 years ago, as societal wealth increased to allow privileging long-term goals over immediate needs.

Banerjee, Konika. 2016. The prosocial benefits of seeing purpose in life events: A case of cultural selection in action? *Behavioral and Brain Sciences* 39.

doi:10.1017/S0140525X15000333.

(A commentary on Norenzayan, et al., below.) Norenzayan et al. propose that religious beliefs with incidental prosocial effects propagated via a long-term process of cultural evolution. Applying their model, the author explores a possible candidate target of cultural selection: the teleological view—often culturally elaborated as a belief in karma or fate—that life events occur to punish or reward individuals' moral behavior.

Beit-Hallahmi, Benjamin. 2016. Prosociality and religion: History and experimentation. *Behavioral and Brain Sciences* 39.

doi:10.1017/S0140525X15000345.

(A commentary on Norenzayan, et al., below.) In this commentary, Norenzayan et al. are praised for choosing to deal with significant questions in the understanding of religion. They are then criticized for refusing to define religion and for relying on problematic theoretical concepts. The authors of the target article discuss Abrahamic religions as the best-known prosocial religions, but the evidence shows that the case does not fit their conceptual framework. Finally, an extension of the authors' ideas about the meaning of priming effects is proposed.

Blackmore, Susan. 2016. Memes and the evolution of religion: we need memetics, too. *Behavioral and Brain Sciences* 39.

doi:10.1017/S0140525X15000357.

(A commentary on Norenzayan, et al., below.) In their analysis, Norenzayan et al. completely ignore memetics, which, unlike other theories, treats memes as replicators and looks to memetic as well as genetic advantage. Now that memes are evolving ever faster, genetic advantage is less relevant. So when religious and secular values are at odds, a memetic analysis is needed to understand what is going on.

Boyer, Pascal & Nicolas Baumard. 2016. Projecting WEIRD features on ancient religions. *Behavioral and Brain Sciences* 39.

doi:10.1017/S0140525X15000369.

(A commentary on Norenzayan, et al., below.) The proposed narrative relies on an anachronistic projection of current religions onto prehistorical and historical cultures that were not concerned with prosocial morality or with public statement of belief. Prosocial morality appeared in wealthier post-Axial environments. Public demonstrations of belief are possible and advantageous when religious diversity starts interacting with coalitional recruitment dynamics in large-scale societies, a typical feature of modern, so-called WEIRD societies.

Brazil, Inti A. & Miguel Farias. 2016. Why would anyone want to believe in Big Gods? *Behavioral and Brain Sciences* 39.

doi:10.1017/S0140525X15000370.

(A commentary on Norenzayan, et al., below.) The present authors suggest an alternative explanation for the emergence of Big Gods that places less emphasis on the role of cognitive tendencies and selection of prosocial cultural variants. Instead, they argue that the fundamental motivation to reduce uncertainty and increase long-term predictability provides a better account for the rise of Big moralizing Gods in a complex and heavily regulated social environment.

Corriveau, Kathleen H. & Eva E. Chen. 2016. A developmental perspective on the cultural evolution of prosocial religious beliefs. *Behavioral and Brain Sciences* 39.

doi:10.1017/S0140525X15000382.

(A commentary on Norenzayan, et al., below.) Norenzayan et al. argue that prosocial religion develops through cultural evolution. Surprisingly, they give little attention to developmental accounts of prosocial religious beliefs. A consideration of the developmental literature supports some, but not all, of the authors' conclusions.

Costello, Fintan John. 2016. Monotheism versus an innate bias towards mentalizing. *Behavioral and Brain Sciences* 39.

doi:10.1017/S0140525X15000394.

(A commentary on Norenzayan, et al., below.) Norenzayan et al.'s account for the spread of monotheistic "Big God" religions sees these religions originating as by-products of innate cognitive biases. These biases produce polytheistic rather than monotheistic systems, however, and so do not explain the origin of monotheism. Accounts where monotheism arises from polytheism (for political reasons, for example) appear better able to explain the spread of monotheism.

Demetriou, Andreas, Nikos Makris & Dimitris Pnevmatikos. 2016. Mind God's mind: History, development, and teaching. *Behavioral and Brain Sciences* 39.

doi:10.1017/S0140525X15000400.

(A commentary on Norenzayan, et al., below.) These authors dispute the target article that belief in Big Gods facilitated development of large societies and suggest that the direction of causality might be inverted. They also suggest that plain theory of mind (ToM), although necessary, is not sufficient to conceive Big Gods. Grasp of other aspects of the mind is required. However, this theory is useful for the teaching of religion.

Dutton, Edward & Guy Madison. 2016. Even "Bigger Gods" developed amongst the pastoralist followers of Moses and Mohammed: Consistent with uncertainty and disadvantage, but not prosociality. *Behavioral and Brain Sciences* 39.

doi:10.1017/S0140525X15000412.

(A commentary on Norenzayan, et al., below.) The gods of monotheistic religions, which began amongst pastoralists and defeated exiles, are closer to Big Gods than those associated with ancient city-based polities. The development of Big Gods is contingent upon a need to reduce uncertainty and negative feelings in combination with a relatively high level of prosociality, rather than a need to induce or assess prosociality.

Ejova, Anastasia. 2016. Awe: A direct pathway from extravagant displays to prosociality. *Behavioral and Brain Sciences* 39.
doi:10.1017/S0140525X15000424.

(A commentary on Norenzayan, et al., below.) Whereas Norenzayan et al. describe extravagant displays as a reliable means of belief transmission, this commentary reviews three emerging hypotheses about a direct connection between the awe elicited by extravagant displays and prosocial behaviour. If some of these hypotheses are correct, extravagant displays enhanced prosociality even among nonbelievers. Methodological suggestions are made for future experimental research on the awe-prosociality pathway.

Galen, Luke W. 2016. Big Gods: Extended prosociality or group binding? *Behavioral and Brain Sciences* 39.
doi:10.1017/S0140525X15000436.

(A commentary on Norenzayan, et al., below.) Big Gods are described as having a “prosocial” effect. However, this conflates parochialism (group cohesion) with cooperation extended to strangers or out-group members. An examination of the cited experimental studies indicates that religion is actually associated with increased within-group parochialism, rather than extended or universal prosociality, and that the same general mechanisms underlie both religious and secular effects.

He, Wen & Maggie (Rong) Hu. 2016. Religion and bank loan terms. *Journal of Banking & Finance* 64. 205–215.
doi:10.1016/j.jbankfin.2015.12.005.

The authors examine whether religion affects the terms of bank loans. Researchers hypothesize that lenders value the traits of religious adherents, such as risk aversion, ethical behavior and honesty, and thus offer favorable loan terms to religious borrowers. Consistent with this hypothesis, it is found that corporate borrowers located in counties with a high level of religiosity are charged lower interest rates, have larger loan amounts and fewer loan covenants. These results suggest that the corporate culture of borrowers influences the availability and cost of bank loans.

Hobson, Nicholas M. & Michael Inzlicht. 2016. Recognizing religion’s dark side: Religious ritual increases antisociality and hinders self-control. *Behavioral and Brain Sciences* 39.
doi:10.1017/S0140525X15000448.

(A commentary on Norenzayan, et al., below.) The target article develops an account of religious prosociality that is driven by increases in self-control. The present authors suggest this account is incomplete. Although religion might increase prosociality to the in-group, it decreases it to the much larger out-group. Rituals, for example, lead to out-group derogation. These authors also challenge the link between religion and improved self-control, offering evidence that religion hinders self-control.

Huebner, Bryce & Hagop Sarkissian. 2016. Cultural evolution and prosociality: Widening the hypothesis space. *Behavioral and Brain Sciences* 39.
doi:10.1017/S0140525X1500045X.

(A commentary on Norenzayan, et al., below.) Norenzayan et al. suggest that Big Gods can be replaced by Big Governments. The present authors examine forms of social and self-monitoring and ritual practice that emerged in Classical China, heterarchical societies like those that emerged in pre-Columbian Mesoamerica, and the contemporary Zapatista movement of Chiapas, and they recommend widening the hypothesis space to include these alternative forms of social organization.

Johnson, Kathryn A. & Adam B. Cohen. 2016. Authoritarian and benevolent god representations and the two sides of prosociality. *Behavioral and Brain Sciences* 39.
doi:10.1017/S0140525X15000461.

(A commentary on Norenzayan, et al., below.) The Big Gods model focuses on belief in an authoritarian God as a psychological mechanism that inhibits antisocial behavior and facilitates the formation of tight, cohesive groups. Recent empirical evidence suggests, however, that belief in a benevolent God is more likely to inspire helping and inclusivity. Both kinds of beliefs are necessary to explain the development of large-scale societies.

Krueger, Joachim I. 2016. Hell of a theory. *Behavioral and Brain Sciences* 39.
doi:10.1017/S0140525X15000473.

(A commentary on Norenzayan, et al., below.) The theory of group-selected Big God religions is a master narrative of cultural evolution. The evidence is a positive manifold of correlated assumptions and variables. Although provocative, the theory is overly elastic. Its critical ingredient—belief in Big Gods—is neither necessary nor sufficient to account for in-group prosociality and discipline. Four specific issues illustrate this elasticity.

Lin, Patrick K. F., Eddie M. W. Tong, Li Neng Lee, Andre H. M. Low & Danielle Gomes. 2016. The prosocial impact of God concept priming on God believers. *Psychology of Consciousness: Theory, Research, and Practice* 3(1). 93–103.
doi:10.1037/cns0000077.

The present research examined the effects of an activation of God on prosociality in the presence or absence of a belief in God. In 3 studies, participants were primed with either the word GOD or the nonword GUB. Their intention to volunteer for community work (Study 1), donate their organs upon their death (Study 2), and the length of time in which they immersed their hands in ice-cold water (cold-pressor task) for the sake of charity (Study 3) were measured. In all 3 studies, participants who professed to believe in God showed higher prosocial responses when exposed to the God prime as compared with the non-God prime. However, this effect was not found among participants who professed to be nonbelievers. Furthermore, the results were constant across several different religions (i.e., Buddhism, Christianity, Islam, & Theism). Hence, results suggest that a personal belief in God moderates the priming effect of God on prosociality. Moreover, the importance of increasing specificity of the constructs examined and engaging in replications of priming studies are also discussed.

Lindeman, Marjaana & Annika M. Svedholm-Häkkinen. 2016. Let us be careful with the evidence on mentalizing, cognitive biases, and religious beliefs. *Behavioral and Brain Sciences* 39.
doi:10.1017/S0140525X15000485.

(A commentary on Norenzayan, et al., below.) Norenzayan et al.'s theoretical synthesis is highly plausible and commendable. However, the empirical evidence for the arguments on mentalizing, cognitive biases, and religious belief is currently not as strong as the writers suggest. Although certainly abundant and compelling, this evidence is indirect, contradictory, and weak and must be acknowledged as such. More direct studies are needed to support the theory.

McCaughey, Robert N. 2016. Are gods and good governments culturally and psychologically interchangeable? *Behavioral and Brain Sciences* 39.
doi:10.1017/S0140525X15000497.

(A commentary on Norenzayan, et al., below.) Cognitive by-product theorists maintain that standard cognitive development facilitates the acquisition of religion. Citing secularization, Norenzayan et al. qualify that theory, proposing that gods and good governments are psychologically and culturally interchangeable. That contention, though, occasions questions about the psychological dynamics involved, about what qualifies as religiosity, and about asymmetries between gods and good governments in the face of catastrophes.

McKay, Ryan & Harvey Whitehouse. 2016. Religion promotes a love for thy neighbour: But how big is the neighbourhood? *Behavioral and Brain Sciences* 39.
doi:10.1017/S0140525X15000503.

(A commentary on Norenzayan, et al., below.) The term prosocial has often been taken to mean nice or neighborly, but many acts that further in-group interests are hostile and aggressive towards out-groups. According to Norenzayan et al., religion's ability to foster social cohesion within religious groups has been a key factor in the human transition to complex societies. But what are the prospects for nonparochial "religious prosociality"?

Norenzayan, Ara, Azim F. Shariff, Will M. Gervais, Aiyana K. Willard, Rita A. McNamara, Edward Slingerland & Joseph Henrich. 2016. The cultural evolution of prosocial religions. *Behavioral and Brain Sciences* 39. e1.
doi:10.1017/S0140525X14001356.

The authors of this target article develop a cultural evolutionary theory of the origins of prosocial religions and apply it to resolve two puzzles in human psychology and cultural history: (1) the rise of large-scale cooperation among strangers and, simultaneously, (2) the spread of prosocial religions in the last 10–12 millennia. The authors argue that these two developments were importantly linked and mutually energizing. They explain how a package of culturally evolved religious beliefs and practices characterized by increasingly potent, moralizing, supernatural agents, credible displays of faith, and other psychologically active elements conducive to social solidarity promoted high fertility rates and large-scale cooperation with co-religionists, often contributing to success in intergroup competition and conflict. In turn, prosocial religious beliefs and practices spread and aggregated as these successful groups expanded, or were copied by less successful groups. This synthesis is grounded in the idea that although religious beliefs and practices originally arose as nonadaptive by-products of innate cognitive functions, particular cultural variants were then selected for their prosocial effects in a long-term, cultural evolutionary process. This framework (1) reconciles key aspects of the adaptationist and by-product approaches to the origins of religion, (2) explains a variety of empirical observations that have not received adequate attention, and (3) generates novel predictions. Converging lines of evidence drawn from diverse disciplines provide empirical support while at the same time encouraging new research directions and opening up new questions for exploration and debate.

Reynolds, Tania & Roy F. Baumeister. 2016. Self-control, cultural animals, and Big Gods. *Behavioral and Brain Sciences* 39.
doi:10.1017/S0140525X15000515.

(A commentary on Norenzayan, et al., above.) As Norenzayan et al. cogently argue, religions that proliferated most successfully did so because they facilitated prosociality and cooperation in large-scale, anonymous groups. One important way that religion promotes cooperation may be through improving self-control. In this comment, RESEARCHERS cover some potential obstacles to implementing self-control and how religion can overcome them.

Roes, Frans L. 2016. Moralizing gods revisited. *Behavioral and Brain Sciences* 39.
doi:10.1017/S0140525X15000527.

(A commentary on Norenzayan, et al., above.) Six ideas explaining the existence of moralizing gods are mentioned, and the terms social and antisocial are discussed.

Seewald, Daniel, Stefanie Hechler & Thomas Kessler. 2016. Divorcing the puzzles: When group identities foster in-group cooperation. *Behavioral and Brain Sciences* 39.
doi:10.1017/S0140525X15000539.

(A commentary on Norenzayan, et al., above.) The present authors argue that general social psychological mechanisms (e.g., common group identity) can account for prosocial behavior and cooperative norms without the need for punishing Big Gods. Moreover, prosocial religions often do not prevent conflict within their religious groups. Hence, the authors doubt whether Big Gods and prosocial religions are more effective than alternative identities in enhancing high-level cooperation.

Soler, Montserrat & Hillary L. Lenfesty. 2016. Coerced coordination, not cooperation. *Behavioral and Brain Sciences* 39.

doi:10.1017/S0140525X15000540.

(A commentary on Norenzayan, et al., above.) Norenzayan et al. propose that Big God (BG) religions are large-group cooperative enterprises that promote internal harmony and higher fertility, resulting in “mutually beneficial exchanges” for those involved. These authors examine the possible distributions of costs and benefits within BG religions and propose that they are, instead, successful coordinating mechanisms that rely on intragroup competition and exploitation between the classes and sexes.

Viciana, Hugo A., Claude Loverdo & Antoni Gomila. 2016. Credibility, credulity, and redistribution. *Behavioral and Brain Sciences* 39.

doi:10.1017/S0140525X15000552.

(A commentary on Norenzayan, et al., above.) After raising some doubts for cultural group selection as an explanation of prosocial religiosity, these authors propose an alternative that views it as a “greenbeard effect.” They combine the dynamic constraints on the evolution of greenbeard effects with Iannaccone’s (1994) account of strict sects. This model shows that certain social conditions may foster credulity and prosociality.

Watson-Jones, Rachel E. & Cristine H. Legare. 2016. The functions of ritual in social groups. *Behavioral and Brain Sciences* 39.

doi:10.1017/S0140525X15000564.

(A commentary on Norenzayan, et al., above.) Ritual cognition builds upon social learning biases that may have become specialized for affiliation within social groups. The adaptive problems of group living required a means of identifying group members, ensuring commitment to the group, facilitating cooperation, and maintaining group cohesion. The authors discuss how ritual serves these social functions.

Watts, Joseph, Joseph Bulbulia, Russell D. Gray & Quentin D. Atkinson. 2016. Clarity and causality needed in claims about Big Gods. *Behavioral and Brain Sciences* 39.

doi:10.1017/S0140525X15000576.

(A commentary on Norenzayan, et al., above.) The authors welcome Norenzayan et al.’s claim that the prosocial effects of beliefs in supernatural agents extend beyond Big Gods. To date, however, supporting evidence has focused on the Abrahamic Big God, making generalizations difficult. The present authors discuss a recent study that highlights the need for clarity about the causal path by which supernatural beliefs affect the evolution of big societies.

White, Claire, Paulo Sousa & Karolina Prochownik. 2016. Explaining the success of karmic religions. *Behavioral and Brain Sciences* 39.

doi:10.1017/S0140525X15000588.

(A commentary on Norenzayan, et al., above.) One of the central claims of Norenzayan et al.’s article is that supernatural monitoring and intergroup competition have facilitated the rise of large-scale prosocial religions. Although the authors outline in detail how social instincts that govern supernatural monitoring are honed by cultural evolution and have given rise to Big Gods, they do not provide a clear explanation for the success of karmic religions. Therefore, to test the real scope of their model, Norenzayan et al. need to seriously engage with questions concerning the evolution of karmic prosocial religions.

1.3 SCIENTIFIC STUDY OF RELIGION: PSYCHOLOGY AND CULTURE

Afsar, Bilal, Yuosre Badir & Umar Safdar Kiani. 2016. Linking spiritual leadership and employee pro-environmental behavior: The influence of workplace spirituality, intrinsic motivation, and environmental passion. *Journal of Environmental Psychology* 45. 79–88.

doi:10.1016/j.jenvp.2015.11.011.

Synthesizing theories of leadership, spirituality, and pro-environmental behavior, this research built and tested a theoretical model linking spiritual leadership with employee pro-environmental behavior via several intervening variables. Data were collected from professional employees across multiple industries in Thailand. Researchers found that, as anticipated, spiritual leadership positively affected workplace spirituality, which in turn influenced both intrinsic motivation and environmental passion. These latter two variables then had a positive influence on pro-environmental behavior. Perceived organizational support moderated the link between spiritual leadership and workplace spirituality, whereas environmental awareness moderated the relationship between workplace spirituality and environmental passion.

Anderson, Cory. 2016. Religious Seekers' Attraction to the Plain Mennonites and Amish. *Review of Religious Research* 58(1). 125–147.
doi:10.1007/s13644-015-0222-5.

For all the liberties granted Westerners, a small stream of seekers is looking into the seemingly austere plain Anabaptist sects (Amish, Mennonites, etc.). What are they seeking? Using theories of modernity, secularization, and gender as guides, this study analyzes survey data from a web-based convenience sample of 1,074 seekers. Females, young adults, and evangelicals are overrepresented. Chief attractions include religious seriousness, strong community, and modesty. A factor analysis of all 21 attractions produced six latent attraction variables. Seekers characteristic of: (1) the “family” factor seek to consolidate social domains around the family, granting parents greater control in offspring socialization, (2) the “femininity” factor reject an increasingly change-minded, sexualized mainstream youth culture, (3) the “personal conviction” factor tend towards evangelical fundamentalism, mistakenly viewing plain people as a sweeping statement against secularization, (4) the “primitivism” factor are seeking to de-modernize in tangible ways, (5) the “stability” factor desire a stabilizing social system to address psychological stresses, and (6) the “returnees” factor are looking to rejoin, either after having left earlier in life or having discovered plain ancestry. Depending on changes in broader society, characteristics of religions may incidentally correspond with era-specific stresses, triggering a generation of seekers, as is the case here with plain Anabaptists.

Basedau, Matthias, Birte Pfeiffer & Johannes Vüllers. 2016. Bad religion? Religion, collective action, and the onset of armed conflict in developing countries. *Journal of Conflict Resolution* 60(2). 226–255.
doi:10.1177/0022002714541853.

Anecdotal evidence from many armed conflicts suggests that religion incites violence. Theoretically speaking, several facets of religion can create motives and opportunities to overcome the collective action problems associated with organized violence. However, empirical research has hitherto found no conclusive answer on the extent to which religion is connected to armed conflict onset. Contributing to the filling of this gap, these researchers use a new database that incorporates important religious factors that previous studies left largely untested. The data set covers 130 developing countries for the period 1990 to 2010. Results from logistic regressions confirm expectations that certain religious factors fuel armed conflict—in particular, the overlap of religious and other identities, religious groups' grievances, and religious leaders' calls for violence. The researchers also find that religious determinants vary in their impact according to whether conflicts are religious or not in origin.

Boer, Elpine M. de & Henk de Roest. 2016. Bonding During the Night of the Churches: Converging and Differing Experiences of Churchgoers and Non-Churchgoers. *Archive for the Psychology of Religion* 38(1). 47–71.
doi:10.1163/15736121-12341317.

How should we understand the paradoxical phenomenon that people are showing substantial interest in new events organized by the church in a Western European society that is characterized by dwindling church attendance? An explorative questionnaire study among 1,016 churchgoers and 317 non-churchgoers was conducted among those who chose to attend the so-called “Night of the Churches” in the Netherlands. The majority of the respondents indicated that they experience the Night of the Churches to be a qualitatively different phenomenon from other festivals (e.g.,

museum night or music festival). Our data suggest that for both churchgoers and non-churchgoers shared bonding experiences (e.g., a special feeling of connectedness, contact with a higher spirit, together with unknown people) are what makes a Night of the Churches unique. Additionally, the results reveal that this event hardly changed respondents' image of the church and that more churchgoers (22%) than non-churchgoers (13%) were interested in new forms of being church. Again, shared bonding experiences make the difference when it comes to being open to new ways of being church.

- Camp, Debbie Van, Jamie Barden & Lloyd Sloan. 2016. Social and Individual Religious Orientations Exist Within Both Intrinsic and Extrinsic Religiosity. *Archive for the Psychology of Religion* 38(1). 22–46.
doi:10.1163/15736121-12341316.

This research presents the development of a measure of religiosity that includes social intrinsic religiosity as distinct from extrinsic religiosity and from the typical conceptualization of intrinsic religiosity as an individual orientation. Study 1 developed the measure using exploratory and confirmatory factor analysis; the results confirmed two intrinsic identity factors (individual and social) and two extrinsic benefit factors (individual and social). Correlations with previously established religiosity measures demonstrate the scales construct validity and that social intrinsic religiosity is independent from extrinsic religiosity. In Study 2, differential responding by Christian and Jewish participants was consistent with these religions' reputed cultural-theological approaches and confirmed the independence of social intrinsic religiosity. Furthermore, social intrinsic religiosity was positively correlated with prejudice towards value-violating outgroups, as would be expected from an intrinsic religiosity. These results unconfound social and extrinsic religiosity and provide empirical evidence that intrinsic religiosity can be socially as well as individually oriented.

- Coates, Dominiek D. 2016. Life inside a deviant “religious” group: Conformity and commitment as ensured through “brainwashing” or as the result of normal processes of socialisation. *International Journal of Law, Crime and Justice* 44. 103–121.
doi:10.1016/j.ijlcrj.2015.06.002.

The dependency inducing practices, sometimes called brainwashing, that are commonly alleged to occur in deviant religious groups such as a cult movements or new religious movements are not well understood and have promoted considerable debate. There is a general agreement that many of these groups are controlled environments in which conformity to behavioral, emotive, cognitive and social expectations as determined by leadership is expected and enforced; however, whether conformity is the result of normal processes of socialization or deviant practices such as brainwashing that cause harm continues to be disputed. To gain an increased understanding of the conformity and commitment inducing practices that occur in “cult movements,” the accounts of group life of 23 former members of 11 different groups were analyzed. A conceptualization of “brainwashing” as on a continuum of social influence is proposed, and some legal implications are discussed.

- Cooper, Marjorie J., Chris Pullig & Charles Dickens. 2016. Effects of Narcissism and Religiosity on Church Ministers with Respect to Ethical Judgment, Confidence, and Forgiveness. *Journal of Psychology & Theology* 44(1). 42–54.

Narcissism has been negatively correlated with better ethical judgment. Intrinsic (I)—but not extrinsic—religiosity has been positively associated with better ethical judgment. Researchers hypothesize that these relationships also hold for Christian church ministers. Therefore, this study of church ministers was undertaken to determine the effects of religiosity and narcissism on the ethical judgment of ministers confronted with 10 different ethical scenarios. To test the hypotheses, researchers surveyed 2,490 Protestant church ministers and received 488 usable surveys. Results indicated that intrinsic religiosity—but not extrinsic personal (Ep) or extrinsic social (Es) religiosity—had significant positive effects on ethical judgment, participants' confidence in their ethical judgment, and participants' willingness to forgive. Ep, in contrast, had significant negative effects on ethical judgment and willingness to forgive, while Es had a significant negative effect on confidence. Narcissism overall had a negative effect on ethical judgment

and was found to interact with intrinsic religiosity such that the effects of narcissism were mitigated in the presence of high levels of intrinsic religiosity.

- Fernandez, Nathaniel A., Sarah A. Schnitker & Benjamin J. Houltberg. 2016. Charitable Sporting Events as a Context for Building Adolescent Generosity: Examining the Role of Religiousness and Spirituality. *Religions* 7(3).
doi:10.3390/rel7030035.

Previous research demonstrates an association between religiousness, spirituality, and generosity in adolescents, but few studies have tested the mechanisms by which religion might facilitate the development of generosity in real-world contexts. In this paper, a theoretical model is presented describing the potential mechanisms by which engagement in transformational contexts (i.e., participating in charity marathon training) may lead to the development of generosity in adolescents. Participation in charity sporting events is theorized to increase generosity through both higher-order mechanisms, such as sanctification and the development of transcendent identity, and lower-order mechanisms, such as increased entitativity, positive emotions, and dissonance reduction. An empirical strategy for testing the model is presented; suggested methods for inquiry are longitudinal mixed method designs incorporating observations, questionnaires, and qualitative interviewing. Additionally, a case study of ongoing research on adolescents running with Team World Vision is described as an application of the model to an actual research context.

- Flower, Lynda. 2016. “My day-to-day person wasn’t there; it was like another me”: A qualitative study of spiritual experiences during peak performance in ballet dance. *Performance Enhancement & Health* 4(1–2). (Performing Arts). 67–75.
doi:10.1016/j.peh.2015.10.003.

This study reviews spiritual lived experiences (secular and religious) reported during peak performance in the performing art of ballet. This review is located in academic discussions of mystical and spiritual experiences in the Western cultural tradition. A small sample of seven selected former professional ballet dancers was interviewed using qualitative research with an interpretative phenomenological analysis (IPA) approach. The findings made evident four major themes: the peak performance lived experience was “extraordinary”; the experience continued in a “post-performance high”; the experience was described as spiritual; and an overall love for ballet. These findings not only confirm previous research but also provide in-depth insights into the spiritual aspect of peak performance in a way other studies in contemporary times do not. A summary table of the findings is included.

- Hackathorn, Jana M., Brien K. Ashdown & Sean C. Rife. 2016. The sacred bed: Sex guilt mediates religiosity and satisfaction for unmarried people. *Sexuality & Culture: An Interdisciplinary Quarterly* 20(1). 153–172.
doi:10.1007/s12119-015-9315-0.

The relationship between religion and sexual satisfaction has long been debated. Oftentimes, previous research on the relationship between these two constructs has been directly contradictory. The current study sought to provide more detail, or perhaps clarify the way that religiosity may relate to sexual satisfaction. Past studies have shown that high religiosity is connected to lower sexual activity, lower desires, and more conservative values. Thus, the current study examined sexual guilt, resulting from sensitivity to internalized religious beliefs and teachings, as a potential mediator between the two constructs. Participants completed an online questionnaire that included measures of religious identification and internalization, sexual satisfaction, and sex guilt. Results suggest that sex guilt mediates the relationship between religiosity and sexual satisfaction for unmarried individuals, but not for married individuals. Researchers suggest calling this finding the sacred bed phenomenon because the difference between the models for married and unmarried samples may be due to a belief in the sacred marital bed.

- Hardie, Jessica Halliday, Lisa D. Pearce & Melinda Lundquist Denton. 2016. The Dynamics and Correlates of Religious Service Attendance in Adolescence. *Youth & Society* 48(2). 151–175.

doi:10.1177/0044118X13483777.

This study examines changes in religious service attendance over time for a contemporary cohort of adolescents moving from middle to late adolescence. Researchers use two waves of a nationally representative panel survey of youth from the National Study of Youth and Religion (NSYR) to examine the dynamics of religious involvement during adolescence. They then follow with an analysis of how demographic characteristics, family background, and life course transitions relate to changes in religious service attendance during adolescence. Our findings suggest that, on average, adolescent religious service attendance declines over time, related to major life course transitions such as becoming employed, leaving home, and initiating sexual activity. Parents' affiliation and attendance, on the other hand, are protective factors against decreasing attendance.

Hatch, T. G., L. D. Marks, E. A. Bitah, M. Lawrence, N. M. Lambert, D. C. Dollahite & B. P. Hardy. 2016. The Power of Prayer in Transforming Individuals and Marital Relationships: A Qualitative Examination of Christian, Jewish, and Muslim Families. *Review of Religious Research* 58(1). 27–46.
doi:10.1007/s13644-015-0236-z.

Prayer is a widely practiced religious behavior. Research has associated prayer with various physical, psychological, and relational benefits. This study used in-depth, interview-based qualitative methods to explore how prayer may foster improvement in married individuals as well as in couples' relationships in a richly diverse sample of 184 religious couples (n=368 individuals). Qualitative data analyses revealed the following related themes: (a) prayer is a catalyst for change; (b) prayer facilitates humility and positivity; (c) prayer facilitates communication and understanding among couples; and (d) prayer unifies couples and helps in resolving conflict. Illustrative and supportive primary data are presented in connection with each theme.

Heintzelman, Samantha J. & Laura A. King. 2016. Meaning in life and intuition. *Journal of Personality and Social Psychology* 110(3). 477–492.
doi:10.1037/pspp0000062.

Three correlational studies and 2 experiments examined the association between meaning in life (MIL) and reliance on intuitive information processing. In Studies 1-3 (total n=5,079), Faith in Intuition (FI) scale and MIL were correlated positively, controlling for religiosity, positive mood, self-esteem, basic need satisfaction, and need for cognition. Two experiments manipulated processing style. In Study 4 (n=614), participants were randomly assigned to complete the Cognitive Reflection Task (CRT) either immediately before (reflective/low intuitive mindset condition) or immediately after (control condition) rating MIL. Condition did not affect MIL. However, low MIL rated before the CRT predicted superior performance and greater time spent on the task. The association between reflection and MIL was curvilinear, such that MIL was strongly negatively related to CRT performance particularly at low levels of MIL. In Study 5 (n=804), intuitive or reflective mindsets were induced and FI and MIL were measured. Induced processing style study did not affect MIL. However, those high in MIL were more responsive to the intuitive mindset induction. The relationship between FI and MIL was curvilinear (in this and the correlational studies), with intuitive processing being strongly positively related to MIL particularly at higher levels of MIL. Although often considered in the context of conscious reflection, MIL shares a positive relationship with reliance on gut feelings, and high MIL may facilitate reliance on those feelings.

Jack, Anthony Ian, Jared Parker Friedman, Richard Eleftherios Boyatzis & Scott Nolan Taylor. 2016. Why Do You Believe in God? Relationships between Religious Belief, Analytic Thinking, Mentalizing and Moral Concern. *PloS One* 11(3). e0149989.
doi:10.1371/journal.pone.0149989.

Prior work has established that analytic thinking is associated with disbelief in God, whereas religious and spiritual beliefs have been positively linked to social and emotional cognition. However, social and emotional cognition can be subdivided into a number of distinct dimensions, and some work suggests that analytic thinking is in tension with

some aspects of social-emotional cognition. This leaves open two questions. First, is belief linked to social and emotional cognition in general, or a specific dimension in particular? Second, does the negative relationship between belief and analytic thinking still hold after relationships with social and emotional cognition are taken into account? The current authors report eight hypothesis-driven studies which examine these questions. These studies are guided by a theoretical model which focuses on the distinct social and emotional processing deficits associated with autism spectrum disorders (mentalizing) and psychopathy (moral concern). Researchers find that religious belief is robustly positively associated with moral concern (4 measures), and that at least part of the negative association between belief and analytic thinking (2 measures) can be explained by a negative correlation between moral concern and analytic thinking. Using nine different measures of mentalizing, they found no evidence of a relationship between mentalizing and religious or spiritual belief. These findings challenge the theoretical view that religious and spiritual beliefs are linked to the perception of agency, and suggest that gender differences in religious belief can be explained by differences in moral concern. These findings are consistent with the opposing domains hypothesis, according to which brain areas associated with moral concern and analytic thinking are in tension.

- Jensen, Lene Arnett & Jessica McKenzie. 2016. The Moral Reasoning of U.S. Evangelical and Mainline Protestant Children, Adolescents, and Adults: A Cultural-Developmental Study. *Child Development* 87(2). 446–464.
doi:10.1111/cdev.12465.

This cultural-developmental interview study examined moral reasoning in relation to religious culture (evangelical, mainline Protestants), age (children, adolescents, adults), and moral issue (public, private; n=120). Compared to adolescents and adults, children used more Ethic of Autonomy and less Ethic of Community reasoning. With age, differences between religious cultures became pronounced. Mainline adults invoked an Ethic of Divinity for private issues. Evangelical adolescents and adults used this ethic frequently, but more for public than private issues. These and other findings indicate that evangelical and mainline Protestants diverge on what should be society's moral lingua franca, and cast new and nuanced light on America's "culture wars."

- Kim, Young-Il. 2016. Bridging Alone: Religious Conservatism, Marital Homogamy, and Voluntary Association Membership. *Review of Religious Research* 58(1). 47–73.
doi:10.1007/s13644-015-0227-0.

This study characterizes social insularity of religiously conservative American married couples by examining patterns of voluntary association membership. Constructing a dataset of 3,938 marital dyads from the second wave of the National Survey of Families and Households, the author investigates whether conservative religious homogamy encourages membership in religious voluntary groups and discourages membership in secular voluntary groups. Results indicate that couples' shared affiliation with conservative denominations, paired with beliefs in biblical authority and inerrancy, increases the likelihood of religious group membership for husbands and wives and reduces the likelihood of secular group membership for wives, but not for husbands. The social insularity of conservative religious groups appears to be reinforced by homogamy-particularly by wives who share faith with husbands.

- Lueke, Adam & Bryan Gibson. 2016. Brief mindfulness meditation reduces discrimination. *Psychology of Consciousness: Theory, Research, and Practice* 3(1). 34–44.
doi:10.1037/cns0000081.

Recent research has demonstrated that mindfulness meditation reduces implicit race and age bias by weakening the associations of the target group with negative constructs. The current research examined the potential for mindfulness to also affect discriminatory behavior. Participants listened to either a 10-min mindfulness audio or a control audio before playing a game in which they interacted with partners of different races in a simulation and decided how much they trusted them with their money. Results indicated that the mindfulness condition exhibited significantly less discrimination in the Trust Game than did either of the 2 control conditions. The implications and importance of mindfulness meditation in alleviating bias are discussed.

Meagher, Benjamin R. 2016. Judgments of Religiosity Following Minimal Interaction. *Archive for the Psychology of Religion* 38(1). 1–21.
doi:10.1163/15736121-12341318.

In the current study, unacquainted groups of both religious Christians and non-religious atheists/agnostics rated themselves and each other on a number of attributes, including religiosity and morality. A Social Relations analysis revealed small, but statistically significant levels of consensus for impressions of religiosity. Subsequent correlations indicated that groups relied on the target's gender and race to reach consensus. Analyses of participants' idiosyncratic ratings revealed similarity between religious and non-religious perceivers in terms of their association of high morality with religiousness. Religious identification did moderate the relationship between religiosity and emotional stability, as well as between religiosity and extraversion. These results indicate that group stereotypes for religiosity are largely shared among both adherents and non-adherents.

Meanley, Steven, Emily S. Pingel & José A. Bauermeister. 2016. Psychological well-being among religious and spiritual-identified young gay and bisexual men. *Sexuality Research & Social Policy: A Journal of the NSRC* 13(1). 35–45.
doi:10.1007/s13178-015-0199-4.

Religiosity and spirituality are often integral facets of human development. Young gay and bisexual men (YGBM), however, may find themselves at odds when attempting to reconcile potentially conflicting identities like religion and their sexual orientation. Researchers sought to explore how different components of religiosity (participation, commitment, spiritual coping) are linked to different markers of psychological well-being (life purpose, self-esteem, and internalized homophobia). Using data collected in Metro Detroit (n=351; ages 18-29 years; 47 % African American, 29 % Non-Latino White, 8 % Latino, 16 % Other Race), researchers examined how components of religiosity/spirituality were associated with psychological well-being among religious/spiritual-identified participants. An overwhelming majority (79.5 %) identified as religious/spiritual, with most YGBM (91.0 %) reporting spirituality as a coping source. Over three quarters of the religious/spiritual sample (77.7 %) reported attending a religious service in the past year. Religious participation and commitment were negatively associated with psychological well-being. Conversely, spiritual coping was positively associated with YGBM's psychological well-being. Programs assisting YGBM navigate multiple/conflicting identities through sexuality-affirming resources may aid improve of their psychological well-being.

Norona, Jerika, Brianna Pollock, Deborah Welsh & Jennifer Bolden. 2016. Religiosity and Intimacy with an Extradynadic Partner in Emerging Adulthood: A Developmental Perspective. *Journal of Adult Development* 23(1). 45–50.
doi:10.1007/s10804-015-9220-7.

The present study examined the relationship between intrinsic religious motivation and both physical and emotional intimacy with an extradynadic partner (i.e., infidelity) in a sample of emerging adults (ages 18-25, n=188) who were involved in dating romantic relationships. The study uniquely conceptualized religiosity in terms of personal and internal connection with religion; additionally, the study included both physical and emotional aspects of extradynadic intimacy behaviors. Contrary to previous research with married adult couples, analyses revealed that intrinsic religious motivation significantly and positively predicted physical and emotional intimacy with an extradynadic partner.

Schredl, Michael, Tadas Stumbrys & Daniel Erlacher. 2016. Dream Recall, Nightmare Frequency, and Spirituality. *Dreaming* 26(1). 1–9.
doi:10.1037/drm0000015.

Dreaming plays a role in all major world religions, so it was expected that dream recall frequency was positively related to a measure of spirituality ("Transpersonal Trust"). The findings of the online survey (n=528) indicate

that there is a relationship between spirituality and dream recall, possibly mediated by mindfulness skills. Two factors might explain this relationship: First, dreams can provide spiritual inspiration and, second, spiritual practices like meditation can increase dream recall. Interestingly, mindfulness was related to lower nightmare frequencies. It would be very interesting to study dreaming in persons undergoing intense spiritual training with regard to, on the one hand, possible beneficial effects of spiritual dreams and, on the other hand, the effect of the spiritual training on dream content.

Sevim, Nurdan, Elif Eroglu Hall & Hisham Motkal Abu-Rayya. 2016. The Role of Religion and Acculturation in the Consumer Ethnocentrism of Turkish Immigrants in Germany. *Religions* 7(3). doi:10.3390/rel7030029.

Researchers have invested much effort in the understanding of acculturation-relevant factors that influence immigrants' psychological and socio-cultural adaptation. Factors that might have an impact on immigrants' product consumption decisions have comparatively received scarce attention by acculturation and marketing researchers. Immigrants show different product consumption patterns and therefore constitute big consumer groups that can have an impact on both the economy of immigrants' culture of origin and the host society. The present study investigated Turkish immigrants' product consumption ethnocentrism. The sample consisted of 599 youth and adult Turkish in Germany drawn from Cologne, the city with the highest ratio of Turkish people in the country. The study sample represented a very similar demographic make-up of the Turkish people in Cologne. The associations between acculturation strategies, loyalty to religion, and product consumption ethnocentrism were quantitatively analyzed based on a field survey. Research findings indicated that participants in the acculturation mode of separation scored significantly higher for consumer ethnocentrism than those showing other orientations, and those with an assimilation orientation scored the least for consumer ethnocentrism. Among the three religiosity dimensions (behavioral, emotional, cognitive) investigated in the present study, analyses controlling for a range of socio-demographic variables revealed a positive relationship between the behavior dimension of religiosity and consumer ethnocentrism.

Shaver, John H., Geoffrey Troughton, Chris G. Sibley & Joseph A. Bulbulia. 2016. Religion and the Unmaking of Prejudice toward Muslims: Evidence from a Large National Sample. *PLoS One* 11(3). e0150209. doi:10.1371/journal.pone.0150209.

In the West, anti-Muslim sentiments are widespread. It has been theorized that inter-religious tensions fuel anti-Muslim prejudice, yet previous attempts to isolate sectarian motives have been inconclusive. Factors contributing to ambiguous results are: (1) failures to assess and adjust for multi-level denomination effects; (2) inattention to demographic covariates; (3) inadequate methods for comparing anti-Muslim prejudice relative to other minority group prejudices; and (4) ad hoc theories for the mechanisms that underpin prejudice and tolerance. Here researchers investigate anti-Muslim prejudice using a large national sample of non-Muslim New Zealanders (n=13,955) who responded to the 2013 New Zealand Attitudes and Values Study. The authors address previous shortcomings by: (1) building Bayesian multivariate, multi-level regression models with denominations modeled as random effects; (2) including high-resolution demographic information that adjusts for factors known to influence prejudice; (3) simultaneously evaluating the relative strength of anti-Muslim prejudice by comparing it to anti-Arab prejudice and anti-immigrant prejudice within the same statistical model; and (4) testing predictions derived from the Evolutionary Lag Theory of religious prejudice and tolerance. This theory predicts that in countries such as New Zealand, with historically low levels of conflict, religion will tend to increase tolerance generally, and extend to minority religious groups. Results show that anti-Muslim and anti-Arab sentiments are confounded, widespread, and substantially higher than anti-immigrant sentiments. In support of the theory, the intensity of religious commitments was associated with a general increase in tolerance toward minority groups, including a poorly tolerated religious minority group: Muslims. Results clarify religion's power to enhance tolerance in peaceful societies that are nevertheless afflicted by prejudice.

Teng, Shan-Chuan & Yunn-Wen Lien. 2016. What Confucius practiced is good for your mind: Examining the effect of a contemplative practice in Confucian tradition on executive functions. *Consciousness and Cognition* 42. 204–215.
doi:10.1016/j.concog.2016.03.016.

The short-term training effects on various executive functions (EFs) by a movement-based contemplative practice (MBCP) are examined. Three aspects of EFs (working memory capacity, inhibition, switching) are assessed before and after a month-long 12-h training period using Body-Mind Axial Awareness (BMAA) principles that Confucius followers have practiced for more than 2000 years. A mindfulness-based practice (Chan-meditation) and a waiting-list control group served as contrast groups. Results showed that the BMAA group performed better on the task that measured working memory capacity than did the Chan-meditation and the waiting-list groups after training. In addition, the Chan-meditation groups outperformed the control group on attentional switching, a novel finding for this kind of practice. These findings not only show a new effect of short-term MBCPs on EFs, but also indicate movement-based and mindfulness-based contemplative practices might benefit development of various aspects of EFs in different ways.

Thurackal, Jobi Thomas, Jozef Corveleyn & Jessie Dezutter. 2016. Spiritual Development and Gratitude Among Indian Emerging Adults. *Archive for the Psychology of Religion* 38(1). 72–88.
doi:10.1163/15736121-12341315.

Gratitude, a significant Christian value, is regarded as a duty among Indians. The present study examines the role played by spiritual development in gratitude among the Indian population. The participants were emerging Indian male adults, aged between 18 and 30 years. The first sample is from 495 Catholic Indian seminarians (267 theology students and 228 philosophy students) with intensive spiritual training, and the second is from 504 Catholic Indian non-seminarians. Researchers use the Gratitude Questionnaire-6 and the Spiritual Assessment Inventory (SAI) in the study. The results show that the factors of SAI, Awareness (of God) and Realistic Experience (of God), had medium-size correlations with gratitude in both samples. Awareness predicted gratitude in both samples and Realistic Acceptance predicted gratitude only in seminarians. The study shows that individuals with an awareness of God's presence tend to be highly grateful. Spiritually mature individuals who undergo spiritual training were also more grateful.

Trent, Natalie, Chanmo Park, Katherine Bercovitz & Ian Chapman. 2016. Trait Socio-Cognitive Mindfulness is Related to Affective and Cognitive Empathy. *Journal of Adult Development* 23(1). 62–67.
doi:10.1007/s10804-015-9225-2.

Research regarding the relationship between empathy and mindfulness is sparse. Within the social scientific literature, there are two major branches of mindfulness research: meditative mindfulness and non-meditative, socio-cognitive mindfulness. Meditative mindfulness is the awareness that arises through paying attention non-judgmentally to the present moment whereas socio-cognitive mindfulness is the process of drawing novel distinctions leading to greater attention to the present moment and sensitivity to context. Researchers hypothesized that the two types of mindfulness would correlate with each other and with empathy broadly defined but that there would be divergence in these relationships given their conceptual distinctions. Four hundred and eighty-four participants from Mechanical Turk completed tasks of socio-cognitive mindfulness, meditative mindfulness, affective empathy, cognitive empathy, and social desirability. Socio-cognitive mindfulness correlated with both affective and cognitive empathy as well as with meditative mindfulness. Meditative mindfulness correlated with only affective empathy but not with cognitive empathy. These findings suggested that, in contrast to meditative mindfulness, socio-cognitive mindfulness involves cognitive processes (e.g., perspective-taking, flexibility) potentially amenable to experimental manipulation aimed at increasing empathy more generally.

Uecker, Jeremy E. & Charles E. Stokes. 2016. Religious Background and Gambling Among Young Adults in the United States. *Journal of Gambling Studies* 32(1). 341–361.
doi:10.1007/s10899-015-9532-3.

Despite the rapid growth of the gambling industry over the last 40 years, there have been few large-scale, nationally representative longitudinal studies of gambling among young adults. Here researchers use data from the National Longitudinal Study of Adolescent to Adult Health to investigate whether and how the gambling behavior of young adults is associated with their religious beliefs and practices during adolescence. The researchers find that young adults who grew up as conservative Protestants, mainline Protestants, Mormons, and Jehovah's Witnesses; those were raised in a community with a higher percentage of conservative Protestants; and those who attended religious services weekly are less likely to have ever gambled. Among gamblers, young adults who attended religious services up to three times per month as adolescents are more likely to experience gambling problems than those who never attend. Notably, accounting for a young adult's propensity for risk-taking behavior does not explain the associations between religion and gambling.

Van Tongeren, Daryl R., Joshua Stafford, Joshua N. Hook, Jeffrey D. Green, Don E. Davis & Kathryn A. Johnson. 2016. Humility attenuates negative attitudes and behaviors toward religious out-group members. *Journal of Positive Psychology* 11(2). 199–208.
doi:10.1080/17439760.2015.1037861.

Humility is marked by the regulation of selfish impulses for the sake of others, including holding a modest view of one's beliefs (and their relative strengths and weaknesses). In three studies, researchers evaluated the extent to which humility attenuates negative attitudes, behavioral intentions, and behaviors toward religious out-group members. In Study 1 (n=159), humility regarding religious beliefs was associated with positive attitudes toward religiously different individuals. In Study 2 (n=149), relational and intellectual humility were associated with less aggressive behavioral intentions in a hypothetical situation in which their cherished beliefs were criticized. In Study 3 (n=62), participants implicitly primed with humility administered significantly less hot sauce (a behavioral measure of aggression) to a religious out-group member who criticized their cherished views relative to participants in the neutral prime condition. The authors highlight the importance of humility in promoting positive attitudes and behaviors toward religious out-group members.

Vishkin, Allon, Yochanan E. Bigman, Roni Porat, Nevin Solak, Eran Halperin & Maya Tamir. 2016. God rest our hearts: Religiosity and cognitive reappraisal. *Emotion (Washington, D.C.)* 16(2). 252–262.
doi:10.1037/emo0000108.

Although religiosity is often accompanied by more intense emotions, the present authors propose that people who are more religious may be better at using 1 of the most effective emotion regulation strategies—namely, cognitive reappraisal. They argue that religion, which is a meaning-making system, is linked to better cognitive reappraisal, which involves changing the meaning of emotional stimuli. Four studies (n=2,078) supported this hypothesis. In Study 1, religiosity was associated with more frequent use of cognitive reappraisal in 3 distinct religions (i.e., Islam, Christianity, Judaism). In Studies 2A-2B, researchers replicated these findings using 2 indices of cognitive reappraisal and in a large representative sample. In Studies 3-4, individuals more (vs. less) religious were more effective in using cognitive reappraisal in the laboratory. Researchers discuss how these findings inform our understanding of the psychology of religion and of emotion regulation.

Webster, Gregory D. & Ryan D. Duffy. 2016. Losing faith in the intelligence–religiosity link: New evidence for a decline effect, spatial dependence, and mediation by education and life quality. *Intelligence* 55. 15–27.
doi:10.1016/j.intell.2016.01.001.

Research has shown negative intelligence–religiosity associations among both persons and countries. Nevertheless, it remains unclear if these associations are stable over time or explained by education, quality of human conditions (QHC), or spatial dependence. In Study 1, researchers re-analyzed Zuckerman et al.’s meta-analysis, and after controlling for sample differences, the negative intelligence–religiosity link declined over time. The intelligence–religiosity link was non-significant among samples using men, pre-college participants, grade point average, and those collected after 2010. Education also partially mediated the intelligence–religiosity link. In Study 2, researchers re-analyzed Lynn et al.’s data from 137 countries and found that QHC positively moderated and partially mediated the positive relation between IQ and disbelief in God; this link became non-significant after controlling for spatial dependence (i.e., the extent to which adjacent countries reflect statistically non-independent observations). Although the negative intelligence–religiosity link appears more robust across people than countries, multiple variables moderate or mediate its strength, and hence, limit its generalizability across time, space, samples, measures, and levels of analysis.

Wright, A. Jordan & Suzanne Stern. 2016. The role of spirituality in sexual minority identity. *Psychology of Sexual Orientation and Gender Diversity* 3(1). 71–79.
doi:10.1037/sgd0000139.

Spirituality has been widely associated with positive well-being within the general population. Although there is limited research on the impact of spirituality on sexual minority individuals, some evidence suggests it is associated with positive psychological outcomes and contributes to the development of a positive lesbian, gay, and bisexual (LGB) identity. The present study aimed to elucidate the relationship between spirituality, gender normative beliefs, and LGB identity development. It was hypothesized that spirituality would be negatively associated with both heteronormative beliefs and attitudes and negative sexual minority identity, and that heteronormativity would mediate the relationship between spirituality and negative identity. Contrary to expectations, spirituality predicted greater heteronormativity and greater negative identity. The association between spirituality and negative identity was fully mediated by heteronormativity. Limitations and implications are discussed.

1.4 SCIENTIFIC STUDY OF RELIGION: METHOD & THEORY

Aukland, Knut. 2016. The Scientization and Academization of Jainism. *Journal of the American Academy of Religion* 84(1). 192–233.
doi:10.1093/jaarel/lfv058.

This article introduces the terms scientization and academization and applies them to Jainism. Scientization denotes processes by which proponents of a religion appeal to modern science. Academization points to processes by which proponents of a religion establish institutions and practices modeled on mainstream academia, actively use markers of such institutions, create ties with mainstream academic institutions and their scholars, and invite academic appraisals of their religion. Scientization and academization thus provide resources to explore, reformulate, and express one’s religion. Tracing these developments back to the colonial era, the author argues that the scientization and academization of Jainism entail changes in doctrines, religious life, and historical self-understanding. While some advocates of scientization and academization challenge traditional authorities, appeals to science and academia are also used to defend traditional views where the authority of science is paradoxically challenged by references to science or academia.

Lybarger, Loren D. 2016. How Far is too Far? Defining Self and Other in Religious Studies and Christian Missiology. *Journal of the American Academy of Religion* 84(1). 127–156.
doi:10.1093/jaarel/lfv067.

This article explores the limits of the debate surrounding Robert A. Orsi’s call for a “third way” in scholar-practitioner encounters in religious studies research. It argues that the debate has reached an impasse and that, as Joel Robbins suggests, an alternative approach might exist within theology—particularly, theological discussions of

how the Christian is to relate to the non-Christian other. The article tests this notion by probing the writings of A. Kenneth Cragg, an Anglican theologian and Islamic Studies specialist who proposed the possibility of expanding the Christian canon within the context of interfaith encounters. The article concludes that although religious studies remains, as a field, unprepared to countenance the kind of hybridization toward which Cragg's conception of the interfaith situation leads, his notion of "bi-scripturalism" has the potential nevertheless of opening up new questions for religious studies scholars concerned with alterity.

Nizigama, Isaac. 2016. 'The Sacred Canopy: An inadequate functional approach to the study of religious in modernity?'. *Studies in Religion-Sciences Religienses* 45(1). 6–25.
doi:10.1177/0008429815622745.

Peter L. Berger's sociology of religion is one of the most studied and quoted in the contemporary social science of religions. Nevertheless, it is also one of the most discussed, notably because of the changes of position by the author with regard to his thought on the secularization of the modern world, and on the relationship between his theses of a sociological nature and his reflections on Protestant theology. The present article questions his global epistemological framework by placing that problematic within the framework of the criticisms which have been directed at absolute functionalism, notably by the structuralists or moderate functionalists. By linking it with the prospect of going beyond the opposition between methodological holism and methodological individualism and between substantivism and functionalism, the author proposes a multidimensional approach to the religious, which seems to lead to a better understanding of the latter in its transformations and metamorphoses into modernity.

PART 2: ARTICLES IN SPIRITUALITY & HEALTH RESEARCH

2.1 SPIRITUALITY & HEALTH: GENERAL HEALTH & WELL-BEING

Al Ahwal, Mahmoud Shaheen, Faten Al Zaben, Mohammad Gamal Sehlo, Doaa Ahmed Khalifa & Harold G. Koenig. 2016. Religious beliefs, practices, and health in colorectal cancer patients in Saudi Arabia. *Psycho-Oncology* 25(3). 292–299.
doi:10.1002/pon.3845.

Colorectal cancer (CRC) patients experience considerable psychological stress because of changes brought on by their illness. Religion may be a resource for such patients. Researchers examined the prevalence of religious beliefs and practices in CRC patients and correlation with demographic, social, psychological, and physical health characteristics. Seventy CRC patients (all Muslim) in Jeddah, Saudi Arabia, were surveyed using a 13-item Muslim religiosity scale. Standard measures were used to assess depressive symptoms, depressive disorder, and social support; demographic and social factors, psychiatric history, and disease factors were also measured. All 70 participants (100%) engaged in group worship and prayer (Fard) five times/day, and 75.7% never skipped or combined two or more obligatory prayers; 71.4% read or recited the Qur'an several times/week or daily; 80.0% gave money to the poor each year (Zakat); 71.4% fasted throughout the month of Ramadan (Sawm) and other times as well; 91.4% said they "definitely" experienced the presence of Allah; and 74.3% said their entire approach to life was definitely based on their religious beliefs. Overall religiosity was inversely related to depressive symptoms and suicidal ideation, after controlling for financial status and social factors. Religious involvement was widespread in this sample of CRC patients in Saudi Arabia and was related to fewer depressive symptoms and less suicidal ideation. No relationship was found with stage of disease or duration of treatment.

Bassett, Rodney L., Evan Carrier, Katherine Charleson, Na Ra Pak, Rachael Schwingel, Alexandra Majors, Meredith Pitre, Andrea Sundlof-Stoller & Carol Blosler. 2016. Is It Really More Blessed to Give Than to Receive? A Consideration of Forgiveness and Perceived Health. *Journal of Psychology & Theology* 44(1). 28–41.

There are several aspects to forgiveness. To this point, few studies have simultaneously considered the impact of all these different aspects, and none have considered the impact of all these aspects of forgiveness upon perceived physical health. Participants, ranging in age from 18 to 93, self-reported tendencies toward various types of dispositional forgiveness, well-being, and empathy. These individuals reported they were most inclined to seek forgiveness from others and feel forgiven by God. They were least inclined to self-forgive. A second study was conducted as a conceptual replication of the first study. Across both studies results suggested that the way granting forgiveness was operationalized mattered and that self-forgiveness was the most significant contributor to perceived physical health.

Braden, B. Blair, Teri B. Pipe, Ryan Smith, Tyler K. Glaspy, Brandon R. Deatherage & Leslie C. Baxter. 2016. Brain and behavior changes associated with an abbreviated 4-week mindfulness-based stress reduction course in back pain patients. *Brain and Behavior* 6(3). e00443.
doi:10.1002/brb3.443.

Mindfulness-based stress reduction (MBSR) reduces depression, anxiety, and pain for people suffering from a variety of illnesses, and there is a growing need to understand the neurobiological networks implicated in self-reported psychological change as a result of training. Combining complementary and alternative treatments such as MBSR with other therapies is helpful; however, the time commitment of the traditional 8-week course may impede accessibility. This pilot study aimed to (1) determine if an abbreviated MBSR course improves symptoms in chronic back pain patients and (2) examine the neural and behavioral correlates of MBSR treatment. Participants were assigned to 4 weeks of weekly MBSR training (n=12) or a control group (stress reduction reading; n=11). Self-report ratings and task-based functional MRI were obtained prior to, and after, MBSR training, or at a yoked time point in the control group. While both groups showed significant improvement in total depression symptoms,

only the MBSR group significantly improved in back pain and somatic-affective depression symptoms. The MBSR group also uniquely showed significant increases in regional frontal lobe hemodynamic activity associated with gaining awareness to changes in one's emotional state. The authors conclude that an abbreviated MBSR course may be an effective complementary intervention that specifically improves back pain symptoms and frontal lobe regulation of emotional awareness, while the traditional 8-week course may be necessary to detect unique improvements in total anxiety and cognitive aspects of depression.

Carr, Tracey, Elizabeth Quinlan, Susan Robertson, Wendy Duggleby, Roanne Thomas & Lorraine Holtslander. 2016. Yoga as palliation in women with advanced cancer: a pilot study. *International Journal of Palliative Nursing* 22(3). 111–117.
doi:10.12968/ijpn.2016.22.3.111.

The purpose of this pilot study was to investigate the palliative potential of home-based yoga sessions provided to women with advanced cancer. Personalized 45-minute yoga sessions were offered to three women with advanced cancer by an experienced yoga teacher. Each woman took part in a one-to-one interview after the completion of the yoga program and was asked to describe her experiences of the program's impact. Following intervention, the personalized nature of the yoga sessions resulted in similar positive physical and psychosocial effects comparable to those demonstrated in other studies with cancer patients. Participants described physical, mental, and emotional benefits as well as the alleviation of illness impacts. The enhancement of mind-body and body-spirit connections were also noted.

Cherkin, Daniel C., Karen J. Sherman, Benjamin H. Balderson, Andrea J. Cook, Melissa L. Anderson, Rene J. Hawkes, Kelly E. Hansen & Judith A. Turner. 2016. Effect of Mindfulness-Based Stress Reduction vs Cognitive Behavioral Therapy or Usual Care on Back Pain and Functional Limitations in Adults With Chronic Low Back Pain: A Randomized Clinical Trial. *JAMA: Journal of the American Medical Association* 315(12). 1240–1249.
doi:10.1001/jama.2016.2323.

Mindfulness-based stress reduction (MBSR) has not been rigorously evaluated for young and middle-aged adults with chronic low back pain. The objective of this study was to evaluate the effectiveness for chronic low back pain of MBSR vs cognitive behavioral therapy (CBT) or usual care. The study was a randomized, interviewer-blind, clinical trial in an integrated health care system in Washington State of 342 adults aged 20 to 70 years with chronic low back pain enrolled between September 2012 and April 2014 and randomly assigned to receive MBSR (n=116), CBT (n=113), or usual care (n=113). CBT (training to change pain-related thoughts and behaviors) and MBSR (training in mindfulness meditation and yoga) were delivered in 8 weekly 2-hour groups. Usual care included whatever care participants received. The coprimary outcomes were the percentages of participants with clinically meaningful ($\geq 30\%$) improvement from baseline in functional limitations (modified Roland Disability Questionnaire [RDQ]; range, 0–23) and in self-reported back pain bothersomeness at 26 weeks. Outcomes were also assessed at 4, 8, and 52 weeks. There were 342 randomized participants; 224 (65.7%) were women; mean duration of back pain was 7.3 years; 123 (53.7%) attended 6 or more of the 8 sessions; 294 (86.0%) completed the study at 26 weeks; 290 (84.8%) completed the study at 52 weeks. In intent-to-treat analyses at 26 weeks, the percentage of participants with clinically meaningful improvement on the RDQ was higher for those who received MBSR (60.5%) and CBT (57.7%) than for usual care (44.1%). The percentage of participants with clinically meaningful improvement in pain bothersomeness at 26 weeks was 43.6% in the MBSR group and 44.9% in the CBT group, vs 26.6% in the usual care group. Findings for MBSR persisted with little change at 52 weeks for both primary outcomes.

Deo, Guru, Itagi R. Kumar, Thaiyar M. Srinivasan & Kuldeep K. Kushwah. 2016. Cumulative effect of short-term and long-term meditation practice in men and women on psychophysiological

parameters of electrophotonic imaging: a cross-sectional study. *Journal of Complementary & Integrative Medicine* 13(1). 73–82.
doi:10.1515/jcim-2015-0050.

Anapanasati is one of the meditation techniques discussed in Buddhism. In this meditation, one focuses one's attention on bodily sensations caused by incoming and outgoing breath. This study aims to track the cumulative effect of long-term meditators (LTM) and short-term meditators (STM) using electrophotonic imaging (EPI). To execute the current study, 432 subjects were recruited from two meditation centers. LTM had practiced for more than 60 months. STM had practiced meditation from 6 months to less than 60 months. In both LTM and STM, lower values of stress (activation coefficient) were found in woman meditators as compared to men. In both groups, highly significant gender-related differences were observed in integral area parameter, which measures the overall health of an individual. Integral entropy (index of disorderliness of subtle energy in the body) was fluctuating in both groups in both directions for both genders. It was increasing in LTM group and decreasing in STM group with increasing length of practice. The authors conclude that women of LTM and STM demonstrated lesser stress than men. Both groups showed cumulative health-related improvement. Moreover, in gender-related analysis woman meditators exhibited more positive improvement in EPI parameters than men.

Guilherme, Caroline, Gabriela Roberta Ribeiro, Silvia Caldeira, Cristina Mara Zamarioli, Ana Railka de Souza Oliveira-Kumakura, Ana Maria Almeida & Emilia Campos de Carvalho. 2016. Effect of the “Spiritual Support” Intervention on Spirituality and the Clinical Parameters of Women Who Have Undergone Mastectomy: A Pilot Study. *Religions* 7(3).
doi:10.3390/rel7030026.

This study aimed to evaluate the effect of the spiritual support intervention on spirituality and the clinical parameters of women who have undergone mastectomy. This is a pilot study of a randomized clinical trial. The spiritual support intervention was composed of meditation, guided imagery, music, and respiratory relaxation. The outcomes were: spirituality, blood pressure, heart rate, and oxygen saturation. A total of 27 patients were recruited for the study (intervention group, n=13; control group, n=14). The intervention helped patients with breast cancer to increase expression of their spirituality and it also decreased heart rate on the first and third day. There was a difference in oxygen saturation on the second day in the control group. Patients reported that their participation in the research was positive.

Harrison, Samantha L., Annemarie Lee, Tania Janaudis-Ferreira, Roger S. Goldstein & Dina Brooks. 2016. Mindfulness in people with a respiratory diagnosis: A systematic review. *Patient Education and Counseling* 99(3). 348–355.
doi:10.1016/j.pec.2015.10.013.

The objective of this review was to describe how mindfulness is delivered and to examine the effect of mindfulness on health-related quality of life (HRQOL), mindful awareness and stress in adults with a respiratory diagnosis. Five electronic databases were searched. Data were extracted and assessed for quality by two reviewers. Data were extracted from four studies. Interventions were based on Mindfulness-Based Stress Reduction and delivered by trained instructors. Recordings of mindfulness were provided for home-based practice. One study targeted the intervention exclusively to anxious individuals with a respiratory diagnosis. Adherence to mindfulness was poor. No effects were seen on disease-specific HRQOL, mindful awareness or stress levels.

Hill, Terrence D., Amy M. Burdette, John Taylor & Jacqueline L. Angel. 2016. Religious Attendance and the Mobility Trajectories of Older Mexican Americans: An Application of the Growth Mixture Model. *Journal of Health and Social Behavior* 57(1). 118–134.
doi:10.1177/0022146515627850.

Although several studies have examined the association between religious involvement and physical functioning, there is no consistent empirical evidence concerning the true nature of the association. The Hispanic population is also surprisingly understudied in previous work. In this article, researchers employ seven waves of data from the Hispanic Established Populations for the Epidemiologic Study of the Elderly to examine the association between religious attendance and performance-based mobility trajectories among older Mexican Americans. Growth mixture estimates reveal three latent classes of mobility trajectories: (1) high, (2) moderate, and (3) low. Multinomial logistic regression estimates show that the odds of being classified as having low mobility (versus high and moderate mobility) are lower for respondents who attend religious services than for respondents who never attend. Religious attendance does not distinguish between moderate and high mobility. Regression results confirm that religious attendance is associated with favorable mobility trajectories among older Mexican Americans.

Iles, Irina, Bradley Boekeloo, Anita Atwell Seate & Sylvia Quinton. 2016. The Impact of Spirituality and Religiosity on Unprotected Sex for Adult Women. *American Journal of Health Behavior* 40(2). 240–247.
doi:10.5993/AJHB.40.2.9.

This article explores the relationship of spirituality and religiosity with sexual behavioral self-efficacy in predicting recent unprotected sex in a sample of adult women, predominantly comprised of African Americans. Data were collected from a sample of 171 adult women via a paper-and-pencil questionnaire. The authors found that an increase in both religiosity and spirituality predicted a decrease in number of types of recent unprotected sex, indirectly through sexual behavior self-efficacy. All indirect effects were similar in magnitude. The results suggest that religiosity and spirituality are both associated with unprotected sex through sexual self-efficacy among African-American women. Faith-based strategies warrant further examination as components of sexual risk reduction efforts for this population.

Kørup, Alex Kappel, Lau Caspar Thygesen, René dePont Christensen, Christoffer Johansen, Jens Søndergaard & Niels Christian Hvidt. 2016. Association between sexually transmitted disease and church membership. A retrospective cohort study of two Danish religious minorities. *BMJ open* 6(3). e010128.
doi:10.1136/bmjopen-2015-010128.

Studies comprising Danish Seventh-day Adventists (SDAs) and Danish Baptists found that members have a lower risk of chronic diseases including cancer. Explanations have pointed to differences in lifestyle, but detailed etiology has only been sparsely examined. The objective of the present authors was to investigate the incidence of sexually transmitted diseases (STDs) among Danish SDAs and Baptists as a proxy for cancers related to sexual behavior. Researchers followed the Danish Cohort of Religious Societies from 1977 to 2009, and linked it with national registers of all inpatient and outpatient care contacts using the National Patient Register. They compared the incidence of syphilis, gonorrhoea and chlamydia among members of the cohort with the general population. The cohort comprised 3119 SDA females, 1856 SDA males, 2056 Baptist females and 1467 Baptist males. For the entire cohort, researchers expected a total of 32.4 events of STD, and observed only 9. Female SDAs and Baptists aged 20-39 years had significant lower incidence of chlamydia. Male SDAs and Baptists aged 20-39 years also had significant lower incidence of chlamydia. No SDA members were diagnosed with gonorrhoea, when 3.4 events were expected, which is a significant difference. No SDA or Baptist was diagnosed with syphilis. The authors conclude that as the cohort shows significant lower incidence of STD, most likely including human papillomavirus, this may partly explain the lower incidence of cancers of the cervix, rectum, anus, head, and neck.

Kruizinga, Renske, Iris D. Hartog, Marc Jacobs, Joost G. Daams, Michael Scherer-Rath, Johannes B. A. M. Schilderman, Mirjam A. G. Sprangers & Hanneke W. M. Van Laarhoven. 2016. The effect of spiritual interventions addressing existential themes using a narrative approach on quality of life of cancer patients: a systematic review and meta-analysis. *Psycho-Oncology* 25(3). 253–265.

doi:10.1002/pon.3910.

The aim of this systematic review was to examine the effect of spiritual interventions on quality of life of cancer patients. Clinical trials were included that compared standard care with a spiritual intervention that addressed existential themes using a narrative approach. Study quality was evaluated by the Cochrane Risk of Bias Tool. A total of 4972 studies were identified, of which 14 clinical trials (2050 patients) met the inclusion criteria, and 12 trials (1878 patients) were included in the meta-analysis. The overall risk of bias was high. When combined, all studies showed a moderate effect 0-2 weeks after the intervention on overall quality of life in favor of the spiritual interventions. Meta-analysis at 3-6 months after the intervention showed a small insignificant effect. Including only studies that met the allocation concealment criteria showed an insignificant effect of 0.14. Directly after the intervention, spiritual interventions had a moderate beneficial effect in terms of improving quality of life of cancer patients compared with that of a control group. No evidence was found that the interventions maintained this effect up to 3-6 months after the intervention.

Lavelock, Caroline R., Brandon J. Griffin, Everett L. Worthington, Eric G. Benotsch, Yin Lin, Chelsea L. Greer, Rachel C. Garthe, et al. 2016. A Qualitative Review and Integrative Model of Gratitude and Physical Health. *Journal of Psychology and Theology* 44(1). 55–86.

Gratitude is seen as a central component of Christian theology, and the extant literature suggests that there is an important relation between gratitude and physical health and well-being. In the current review, researchers summarize 42 studies published since 2009 that inform this relationship. Based on the theoretical framework by Hill, Allemand, and Roberts (2013), they organize the review in three sections that focus on how gratitude influences physical health through (a) mental health, (b) health behaviors, and (c) interpersonal variables. The authors discuss and integrate the findings from these studies into a theoretical model of gratitude and physical health. In addition to the three mechanisms in the Hill et al. model, they integrate variables from a previously conducted literature review of gratitude and well-being, and add personal factors, positive or adverse events, and explicit interventions as antecedents to gratitude in the model.

Lötzke, Désirée, Florian Wiedemann, Daniela Rodrigues Recchia, Thomas Ostermann, Daniel Sattler, Johannes Ettl, Marion Kiechle & Arndt Büssing. 2016. Iyengar-Yoga Compared to Exercise as a Therapeutic Intervention during (Neo)adjuvant Therapy in Women with Stage I-III Breast Cancer: Health-Related Quality of Life, Mindfulness, Spirituality, Life Satisfaction, and Cancer-Related Fatigue. *Evidence-Based Complementary and Alternative Medicine: eCAM* 2016. 5931816.
doi:10.1155/2016/5931816.

This study aims to test the effects of yoga on health-related quality of life, life satisfaction, cancer-related fatigue, mindfulness, and spirituality compared to conventional therapeutic exercises during (neo)adjuvant cytotoxic and endocrine therapy in women with breast cancer. In a randomized controlled trial 92 women with breast cancer undergoing oncological treatment were randomly enrolled for a yoga intervention (YI) (n=45) or for a physical exercise intervention (PEI) (n=47). Measurements were obtained before (t 0) and after the intervention (t 1) as well as 3 months after finishing intervention (t 2) using standardized questionnaires. Life satisfaction and fatigue improved under PEI but not under YI (t 0 to t 2). Regarding quality of life, a direct effect of YI was found on role and emotional functioning, while under PEI only emotional functioning improved. Significant improvements were observed at both t 1 and t 2 also for symptom scales in both groups: dyspnea, appetite loss, constipation, and diarrhea. There was no significant difference between therapies for none of the analyzed variables neither for t 1 nor for t 2. During chemotherapy, yoga was not seen as more helpful than conventional therapeutic exercises. This does not argue against its use in the recovery phase.

Neilson, Kate, Maria Ftanou, Kaveh Monshat, Mike Salzberg, Sally Bell, Michael A. Kamm, William Connell, et al. 2016. A Controlled Study of a Group Mindfulness Intervention for Individuals Living with Inflammatory Bowel Disease. *Inflammatory Bowel Diseases* 22(3). 694–701.

doi:10.1097/MIB.0000000000000629.

This study aimed to evaluate the feasibility, acceptability, and effectiveness of a mindfulness-based intervention for patients with inflammatory bowel disease (MI-IBD) using a treatment-as-usual control versus mindfulness-based stress reduction intervention. Sixty patients participated in either the MI-IBD (n=33) or treatment-as-usual group (n=27) conditions. The MI-IBD consisted of an 8-week mindfulness-based stress reduction training group. Outcome measures were administered at baseline (before intervention), immediately after intervention, and 6 months after intervention. Primary outcomes included measures of quality of life, psychological distress (depression and anxiety), and mindfulness. Data for MI-IBD group participants also included weekly attendance, daily minutes meditated, and satisfaction with the program. There were no baseline differences between intervention and control groups on demographic variables or inflammatory bowel disease severity. Compared with the control group, the MI-IBD group reported significantly greater improvements in anxiety, quality of life, and mindfulness at after intervention, with reduction in depression and improvements in quality of life and mindfulness maintained at 6 months after intervention.

Park, Crystal L., Carolyn M. Aldwin, Soyoung Choun, Login George, Damodhar P. Suresh & Deborah Bliss. 2016. Spiritual peace predicts 5-year mortality in congestive heart failure patients. *Health Psychology* 35(3). 203–210.
doi:10.1037/hea0000271.

Spirituality is favorably related to depression, quality of life, hospitalizations, and other important outcomes in congestive heart failure (CHF) patients but has not been examined as a predictor of mortality risk in this population. Given the well-known difficulties in managing CHF, we hypothesized that spirituality would be associated with lower mortality risk, controlling for baseline demographics, functional status, health behaviors, and religiousness. Participants were 191 CHF patients who completed a baseline survey and were then followed for 5 years. Nearly 1/3 of the sample (32%) died during the study period. Controlling for demographics and health status, smoking more than doubled the risk of mortality, whereas alcohol consumption was associated with slightly lower risk of mortality. Importantly, adherence to healthy lifestyle recommendations was associated with halved mortality risk. Although both religion and spirituality were associated with better health behaviors at baseline in bivariate analyses, a proportional hazard model showed that only spirituality was significantly associated with reduced mortality risk (by 20%), controlling for demographics, health status, and health behaviors. The authors conclude that experiencing spiritual peace, along with adherence to a healthy lifestyle, were better predictors of mortality risk in this sample of CHF patients than were physical health indicators such as functional status and comorbidity. Future research might profitably examine the efficacy of attending to spiritual issues along with standard lifestyle interventions.

Pecoraro, Anna, Aureliano Pacciolla, Conall O’Cleirigh, Matthew Mimiaga, Piotr Kwiatek, Elena Blokhina, Elena Verbitskaya, Evgeny Krupitsky & George E. Woody. 2016. Proactive coping and spirituality among patients who left or remained in antiretroviral treatment in St Petersburg, Russian Federation. *AIDS Care* 28(3). 334–338.
doi:10.1080/09540121.2015.1096895.

Positive Psychology, the study of “positive” factors or strengths and evidence-based interventions to increase them, is a rapidly developing field that is beginning to be applied to HIV care. Proactive coping and spirituality are two positive characteristics that have been examined in multiple chronic serious health conditions. In the present study, lost-to-care (LTCs; did not attend treatment for ≥ 12 months; n=120) and engaged-in-care HIV clinic patients (EICs; attended treatment for ≥ 12 months and adherent with antiretrovirals; n=120) in Leningrad Oblast, Russian Federation were compared on the Proactive Coping Inventory and View of God Scale. EICs had higher scores in proactive coping and instrumental and emotional support, indicating that they engage in autonomous goal setting and self-regulate their thoughts and behaviors; obtain advice and support from their social network; and cope with emotional distress by turning to others. LTCs had higher scores in avoidance coping. More EICs were spiritual,

religious, or both. EICs were more likely to believe in God/Higher Power and an afterlife; have a relationship with God/Higher Power; and call on God/Higher Power for help, healing, or protection. EICs had more positive and less negative views of God. Similar proportions, but slightly more EICs than LTCs were members of a faith community; members of a 12-step group; or attended religious or spiritual services, meetings, or activities. More EICs than LTCs engaged in private spiritual or religious activities, such as prayer or meditation.

- Perez-Blasco, Josefa, Alicia Sales, Juan C. Melendez & Teresa Mayordomo. 2016. The Effects of Mindfulness and Self-Compassion on Improving the Capacity to Adapt to Stress Situations in Elderly People Living in the Community. *Clinical Gerontologist* 39(2). 90–103.
doi:10.1080/07317115.2015.1120253.

This study aimed to show the effectiveness of mindfulness and self-compassion therapy in improving coping ability and adaptation to stressful situations in the elderly. Forty-five elderly non-institutionalized adults were randomized to either treatment or a treatment waiting list. A pre- and post-treatment assessment was performed, consisting of the Brief Resilient Coping Scale (BRCS), Depression Anxiety Stress Scales (DASS), and Coping Strategies Questionnaire. The program was developed over 10 sessions lasting 120 minutes each. Analysis of variance for repeated measures showed significant differences in the time-group interaction for the treatment's effectiveness in improving resilience, positive reappraisal and avoidance strategies, and decreasing anxiety, problem-solving coping, negative self-focus, overt emotional expression and religion.

- Rabin, Carolyn, Bernardine Pinto & Joseph Fava. 2016. Randomized Trial of a Physical Activity and Meditation Intervention for Young Adult Cancer Survivors. *Journal of Adolescent and Young Adult Oncology* 5(1). 41–47.
doi:10.1089/jayao.2015.0033.

Young adult cancer survivors have a number of increased health and psychosocial risks. To minimize these risks, they must address any modifiable risk factors, for example increase their physical activity (PA) and reduce stress. Unfortunately, more than half of young survivors remain sedentary, and few participate in a structured form of relaxation. This study evaluated the feasibility, acceptability, and effects of a theory-based PA and meditation intervention for young survivors. Young adult cancer survivors (age 18-39 years) were randomized to receive the 12-week "RElaxation aNd Exercise for Wellness" (RENEW) intervention right away (intervention group) or after a 12-week wait (control group). Participants were assessed at baseline, 12 weeks, and 24 weeks. Thirty-five survivors were enrolled and randomized. Results indicate that 89% of intervention calls were delivered, and most participants felt that intervention goals and the number and duration of intervention calls were appropriate. Satisfaction ratings indicate that the intervention was acceptable, and 100% of participants would recommend it to others. Comparison of the intervention and control groups at the 12-week assessment (i.e., before controls received the intervention) revealed that the intervention group was performing more minutes of at least moderate intensity PA/week and outperformed controls on a test of cardiovascular fitness. When data from the intervention and control groups were pooled, pre- to post-intervention analyses indicated a trend toward improved mood.

- Tzounis, Efthymios, Theodora Kerenidi, Zoe Daniil, Chryssi Hatzoglou, Evangelia Kotrotsiou & Konstantinos Gourgoulisanis. 2016. A Qualitative Content Analysis of Spirituality and Religiosity amongst Greek COPD Patients. *Religions* 7(3).
doi:10.3390/rel7030022.

Chronic Obstructive Pulmonary Disease (COPD) is a chronic and common disease throughout the world. Spiritual/religious beliefs are often central to patients with serious illnesses and could serve as a resource for coping with such illnesses. A qualitative methodology was chosen in order to gain a thorough understanding of 75 Greek COPD patients' perceptions of spirituality and religiosity and explore the importance of practicing their beliefs while 25 patients refused to participate in the study. The fewer female participant patients in the study are related to the lower percentage of women suffering from COPD in Greece, which can be further linked to the low smoking habit

of women. A total of four patients (5.3%) stated that they had no religious or spiritual understanding of their life; 41 (54.7%) reported a religious belief; eight (10.7%) told of a spiritual belief; and 22 (29.3%) of the participants reported both a religious and a spiritual belief. Faith in the will of God seems to be a particularly strong feature of patients' beliefs. Praying and church attendance were more likely to confirm the importance of practicing their beliefs in their daily lives but COPD seems to prevent patients from regular churchgoing. Religion and spirituality were found to be helpful while patients did not seem to have unrealistic expectations from God when dealing with illness. When asked, participants defined spirituality as "happiness", "love", "our God", "the spirit", and as an act of altruism. Adopting a more holistic perspective for COPD patients in the clinical setting, spirituality and religiosity can offer suggestions for interventions related to their health issues.

Zamaniyan, Sakineh, Jafar Bolhari, Ghasem Naziri, Majid Akrami & Sara Hosseini. 2016. Effectiveness of Spiritual Group Therapy on Quality of Life and Spiritual Well-Being among Patients with Breast Cancer. *Iranian Journal of Medical Sciences* 41(2). 140–144.

Cancer is deemed the century's major health problem, and its increasing growth during the last decades has made experts concerned more than ever. Of all types of cancer, breast cancer is regarded as the second most common disease among women. The aim of this study was to determine the effectiveness of spiritual group therapy on quality of life and spiritual well-being among patients suffering from breast cancer. The present research was carried out between March and June 2011. The sample consisted of 24 participants randomly assigned to 2 groups: an experimental group (n=12) and a control group (n=12). All the subjects completed questionnaires on quality of life and spiritual well-being in pretest and posttest. The experimental group received 12 sessions of spiritual group therapy. The results demonstrated improvement in quality of life and spiritual well-being in the experimental group. In conclusion, spiritual group therapy can be used to improve quality of life and spiritual well-being (religious health and existential health) among patients with breast cancer.

2.2 SPIRITUALITY & HEALTH: MENTAL HEALTH

Anonymous. 2016. Muslim and gay: seeking identity coherence in New Zealand. *Culture Health & Sexuality* 18(3). 280–293.
doi:10.1080/13691058.2015.1079927.

The process of accepting oneself as gay and of coming out' to family and friends is well documented. For Muslim men, this is complicated by the tension between their emerging sexual identity and their religious and cultural birth identity, which labels homosexuality as sinful. This paper explores this process in a sample of five gay Muslim men living in New Zealand, a liberal secular society where homosexuality is widely accepted and gay rights are endorsed in legislation. Identity Process Theory drives the analysis, which identifies five themes encapsulating the process of striving for psychological coherence: resistance, acceptance, tension, renegotiation and pretense. Initial phases of denial and anger at their emerging sexuality are strongly linked to the conflict with their religious identity. Later, acceptance of their sexuality as natural and even God-given protects them from blame for their sins. In contrast to earlier work in the UK, for most men, renegotiation of their Muslim identity is adopted as the key strategy for achieving intrapsychic coherence. However, at an interpersonal level, families remain a source of conflict, temporarily resolved through pretense. Renegotiating religious identity leaves men having to pretend not just to be straight, but also to be strongly religious.

Arch, Joanna J., Lauren N. Landy & Kirk Warren Brown. 2016. Predictors and moderators of biopsychological social stress responses following brief self-compassion meditation training. *Psychoneuroendocrinology* 69. 35–40.
doi:10.1016/j.psyneuen.2016.03.009.

Earlier reports demonstrated that brief self-compassion meditation training (SCT) dampened sympathetic (salivary alpha-amylase) and subjective anxiety responses to the Trier Social Stress Test (TSST), relative to attention and

no-instruction control conditions. The present study examined baseline predictors and moderators of these SCT intervention effects. Baseline characteristics included two stress vulnerability traits (social anxiety and rumination) and two potential resiliency traits (non-attachment and self-compassion). Researchers investigated how these traits moderated the effects of SCT on response to the TSST, relative to the control conditions. They also tested how these individual differences predicted TSST responses across conditions in order to uncover characteristics that confer increased vulnerability and resiliency to social stressors. Trait non-attachment, rumination (for sympathetic TSST response only), and social anxiety (for subjective TSST response only) interacted with training condition to moderate TSST responses such that following SCT, lower attachment and lower social anxiety predicted lower TSST stress responses, relative to those scoring higher on these traits. In contrast, trait self-compassion neither moderated nor predicted responses to the TSST. Thus, although SCT had robust effects on buffering stress across individuals with varying levels of trait self-compassion, other psychological traits enhanced or dampened the effect of SCT on TSST responses. These findings support the importance of examining the role of relevant baseline psychological traits to predict sympathetic and subjective responses to social evaluative threat, particularly in the context of resiliency training.

Bonnewyn, Anke, Ajit Shah, Ronny Bruffaerts & Koen Demyttenaere. 2016. Are religiousness and death attitudes associated with the wish to die in older people? *International Psychogeriatrics* 28(3). 397–404.
doi:10.1017/S1041610215001192.

A wish to die is common in older persons and is associated with increased mortality. Several risk factors have been identified, but the association between religiousness and a wish to die in older adults has been underexplored, and the association between death attitudes and the presence of a wish to die has not been investigated yet. The aim of this study is to explore the relationship between religiousness and death attitudes on the one hand and wish to die on the other hand, adjusting for clinical factors such as the presence of depression or somatic disorder. The sample comprised 113 older inpatients (from a psychiatric and somatic ward) with a mean age of 74 years. Psychiatric diagnoses were assessed by the Structured Clinical Interview for DSM-IV Disorders, and logistic regression analyses estimated the unique contribution of religiousness and death attitudes to the wish to die, controlling for socio-demographic variables, depressive disorder, and somatic symptoms. Both religiousness and death attitudes were associated with a wish to die in univariate models. Adding these variables in a multivariate logistic hierarchical model, death attitudes remained significant predictors but religiousness did not; 55% of the pseudo-variance of the wish to die was explained by these variables. Major depressive episode, somatic symptoms, Fear of Death, and Escape Acceptance were the most important predictors of the wish to die.

Borgen, Berit. 2016. Transformative Existential Experiences and the Mental Growth Stages Illustrated by Case Reports. *Archive for the Psychology of Religion* 38(1). 89–128.
doi:10.1163/15736121-12341319.

The article describes part of an on-going research on the processes of mental liberation and growth. The original research material is based on qualitative research methods and ethnographic in-depth interviews with drug-addicted persons undergoing treatment. The material is further analyzed within a framework presented in Kazimierz Dabrowski's theory: mental growth through positive disintegration. This framework was found to be useful in the analysis of the participants' mental growth processes particularly due to the integration of human's transcending ability. Participants contribute in describing how transformative existential experiences may promote the process of mental growth. Importance of activating the mental transcending ability is shown to be central in the recovery process. One profound transformative existential experience is described as the possibility to be who you are, an identity experience which elicited the genuine self. The study sheds light on human mental development when the therapy included activation of the spiritual/religious dimension.

- Chang, Edward C., Zunaira Jilani, Erin E. Fowler, Tina Yu, Shao Wei Chia, Elizabeth A. Yu, Hannah K. McCabe & Jameson K. Hirsch. 2016. The relationship between multidimensional spirituality and depressive symptoms in college students: Examining hope agency and pathways as potential mediators. *Journal of Positive Psychology* 11(2). 189–198.
doi:10.1080/17439760.2015.1037859.

In this study, researchers examined goal-focused hope as a potential mediator between the association of multidimensional spirituality and depressive symptoms in a sample of 319 college students. Results of conducting a series of multiple mediation tests indicated that hope agency, but not hope pathways, fully and significantly accounted for the associations of ritualistic, theistic, and existential spirituality with depressive symptoms. Overall, these findings offer support for the contention that hope agency plays an important role in accounting for the association between spirituality and psychological adjustment in college students.

- Das, Aniruddha & Stephanie Nairn. 2016. Religious Attendance and Physiological Problems in Late Life. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences* 71(2). 291–308.
doi:10.1093/geronb/gbu089.

This study queried linkages of older adults' religious attendance with their physiological health. Data were from the 2005-2006 National Social Life, Health, and Aging Project, nationally representative of U.S. adults aged 57-85 years. Analyses examined associations of religious attendance with biological states, potential gender variations in these linkages, and attenuation by this factor of health effects of spousal loss. Religious attendance was negatively associated with a system of physiological issues, consistent with mitigation of multi-systemic "weathering." Linkages were relatively uniform with inflammatory and cardiovascular but not metabolic states and were not significantly different for women than men. Effects of spousal loss on the 2 former subsystems were attenuated by regular religious attendance-in combined-gender analysis and among women, but not men.

- Davis, Richard F. III & Lisa Kiang. 2016. Religious identity, religious participation, and psychological well-being in Asian American adolescents. *Journal of Youth and Adolescence* 45(3). 532–546.
doi:10.1007/s10964-015-0350-9.

Religiosity plays a prominent spiritual and social role in adolescents' lives. Yet, despite its developmental salience, few studies have examined normative changes in religiosity or the implications of these changes for psychological well-being. Researchers explored longitudinal variation in and associations between religiosity, as defined by private regard, centrality, and participation in religious activities, and diverse indicators of well-being including self-esteem, depressive symptoms, positive and negative affect, and both the presence of and search for meaning in life. The participants were two cohorts of Asian American high school students (n=180; 60 % female) followed for 4 years and living in the southeastern US. Using hierarchical linear modelling and controlling for gender and generational status, results revealed that religious identity (i.e., regard, centrality) did not normatively increase or decrease over time, but participation increased. Religious identity was significantly associated with higher self-esteem, greater positive affect, the presence of meaning in life, and reduced depressive symptoms (for females), and participation was positively associated with positive affect and the presence of meaning. These results and discussion emphasize the utility of further examining how religion plays a role in health and well-being, particularly among immigrant youth.

- Holmes, Christopher & Jungmeen Kim-Spoon. 2016. Why are Religiousness and Spirituality Associated with Externalizing Psychopathology? A Literature Review. *Clinical Child and Family Psychology Review* 19(1). 1–20.
doi:10.1007/s10567-015-0199-1.

This review explores the relation of religiousness and spirituality with externalizing psychopathology in adolescence given the heightened externalizing psychopathology during this developmental period. Utilizing a developmental psychopathology framework, previous literature is reviewed focusing on the diversity of pathways from religiousness

and spirituality to externalizing psychopathology at multiple levels of analysis. Moreover, the pathways considered include both intra-individual factors (e.g., self-control, monitoring, delay discounting and time orientation, and neurobiological regulatory systems) and ecological factors (e.g., intergenerational transmission, parent-child relationships, and community relationships). These pathways are explored in light of theoretical viewpoints including social control theory, divine interaction theory, and the religious ecology model. Limitations of extant work are examined, including measurement and design issues, exploration of potential negative effects of religiousness and spirituality, and bias toward Western religions. Finally, future directions of research and clinical implications are discussed.

Jegannathan, Bhoomikumar, Gunnar Kullgren & Kjerstin Dahlblom. 2016. How do young people in Cambodia perceive the impact of societal attitudes, media and religion on suicidal behaviour? *The International Journal of Social Psychiatry* 62(2). 114–122.
doi:10.1177/0020764015597952.

Young people in low and middle income countries (LMICs) in societal transitions with rapidly changing norms face an increased risk of suicide. This study explores how young people in Cambodia understand the impact on suicidal behavior from societal attitudes, media and religion. Focus group discussions were held with school students from a suburban area. Thematic analysis was used to interpret the data. Participants perceived the prevailing suicide-stigmatizing societal attitudes, the double-edged media and suicide-ambiguity in Buddhist religion as challenging. Globalization was recognized as contradicting with traditional Cambodian norms and values.

Pearce, Michelle J. & Harold G. Koenig. 2016. Spiritual Struggles and Religious Cognitive Behavioral Therapy: A Randomized Clinical Trial in Those with Depression and Chronic Medical Illness. *Journal of Psychology & Theology* 44(1). 3–15.

This study compared the effectiveness of religious cognitive-behavioral therapy (RCBT) versus conventional CBT (CCBT) on reducing spiritual struggles in persons with major depressive disorder (MDD) and medical illness. Participants were randomized to receive 10 sessions of RCBT (n=65) or CCBT (n=67). Spiritual struggles were assessed at baseline, 12, and 24 weeks using the Brief RCOPE. Following intervention, RCBT and CCBT reduced spiritual struggles to a similar degree over time. Similar results were found in those with high religiosity and with high spiritual struggles at baseline. Higher baseline spiritual struggles predicted a slower decline in MDD independent of treatment group. RCBT and CCBT are equally effective in reducing spiritual struggles in persons with MDD and medical illness. High spiritual struggles decrease the response of MDD to both RCBT and CCBT.

Rhodes, Alison, Joseph Spinazzola & Bessel van der Kolk. 2016. Yoga for Adult Women with Chronic PTSD: A Long-Term Follow-Up Study. *Journal of Alternative and Complementary Medicine* 22(3). 189–196.
doi:10.1089/acm.2014.0407.

Yoga may serve as a useful adjunctive component of trauma-focused treatment to build skills in tolerating and modulating physiologic and affective states that have become dysregulated by trauma exposure. A previous randomized controlled study was carried out among 60 women with chronic, treatment-resistant post-traumatic stress disorder (PTSD) and associated mental health problems stemming from prolonged or multiple trauma exposures. After 10 sessions of yoga, participants exhibited statistically significant decreases in PTSD symptom severity and greater likelihood of loss of PTSD diagnosis, significant decreases in engagement in negative tension reduction activities (e.g., self-injury), and greater reductions in dissociative and depressive symptoms when compared with the control (a seminar in women's health). The current study is a long-term follow-up assessment of participants who completed this randomized controlled trial. Participants from the randomized controlled trial were invited to participate in long-term follow-up assessments approximately 1.5 years after study completion to assess whether the initial intervention and/or yoga practice after treatment was associated with additional changes. Forty-nine women completed the long-term follow-up interviews. Hierarchical regression analysis was used to examine whether treatment

group status in the original study and frequency of yoga practice after the study predicted greater changes in symptoms and PTSD diagnosis. Group assignment in the original randomized study was not a significant predictor of longer-term outcomes. However, frequency of continuing yoga practice significantly predicted greater decreases in PTSD symptom severity and depression symptom severity, as well as a greater likelihood of a loss of PTSD diagnosis.

- Santos, Teresa Maria dos, Elisa Harumi Kozasa, Isabel Sampaio Carmagnani, Luiza Hiromi Tanaka, Shirley Silva Lacerda & Luiz Antonio Nogueira-Martins. 2016. Positive Effects of a Stress Reduction Program Based on Mindfulness Meditation in Brazilian Nursing Professionals: Qualitative and Quantitative Evaluation. *EXPLORE: The Journal of Science and Healing* 12(2). 90–99.
doi:10.1016/j.explore.2015.12.005.

Mindfulness meditation has been shown to effectively mitigate the negative effects of stress among nursing professionals, but in countries like Brazil, these practices are relatively unexplored. To evaluate the effects of a Stress Reduction Program (SRP) including mindfulness and loving kindness meditation among nursing professionals working in a Brazilian hospital setting. A pilot study with a mixed model using quantitative and qualitative methods was used to evaluate a group of participants. The quantitative data were analyzed at three different time points: pre-intervention, post-intervention, and follow-up. The qualitative data were analyzed at post-intervention. Participants were 13 nursing professionals, including nurses, technicians, and nursing assistants working in a Brazilian hospital. Participants underwent mindfulness and loving kindness meditation during a period of six weeks. Following intervention, quantitative analyses revealed a significant reduction between pre-intervention and post-intervention scores for perceived stress, burnout, depression, and anxiety (trait). These variables showed no significant differences between post-intervention and follow-up scores. The WHOQOL-BREF revealed significant increase just in the physical and psychological domains at post-intervention scores, which remained at the follow-up. Qualitative results showed improvement in the reactivity to inner experience; a more attentive perception of internal and external experiences; greater attention and awareness of actions and attitudes at every moment; and a positive influence of the SRP in nursing activities.

- Uecker, Jeremy E., Christopher G. Ellison, Kevin J. Flannelly & Amy M. Burdette. 2016. Belief in Human Sinfulness, Belief in Experiencing Divine Forgiveness, and Psychiatric Symptoms. *Review of Religious Research* 58(1). 1–26.
doi:10.1007/s13644-015-0232-3.

Many mental health and religious professionals have long argued that belief in human sinfulness is associated with poor mental health. Others argue that the deleterious mental health effects of belief in sinfulness may be buffered by a concomitant belief in divine forgiveness, which may itself have positive mental health benefits. Researchers test these ideas using data from a national survey of US adults (n=1,629). Our results indicate a positive association between belief in human sinfulness and all eight classes of psychiatric symptoms researchers examine, and a negative relationship between belief in being divinely forgiven and six of the classes of psychiatric symptoms. Moreover, there are significant interaction effects between believing humans to be sinful and belief in being forgiven for seven of the eight outcomes such that the net effects of believing in sin on mental health are attenuated for those who believe they have experienced God's forgiveness in their lives. Among those who report feeling forgiven by God "many times," belief in human sinfulness is only associated with four of the psychiatric outcomes, and these associations are modest in size. These findings provide partial support for the idea that belief in sinfulness is bad for mental health, but also show that religious beliefs are best understood in relation to other beliefs. Believing in human sinfulness is not necessarily harmful if it is accompanied by belief in having experienced divine forgiveness. This study contributes to a growing body of research explicating the relationships among religious beliefs and mental health.

2.3 SPIRITUALITY & HEALTH: METHOD AND THEORY

Bagnasco, Annamaria, Giuseppe Aleo, Barbara Delogu, Gianluca Catania & Loredana Sasso. 2016. Holistic Nursing of Forensic Patients: A Focus on Spiritual Care. *Religions* 7(3). doi:10.3390/rel7030031.

Prisons are a unique context where nurses are required to have specific skills to ensure that prisoners receive the same type of holistic care as anyone else out of prison, including spiritual care. This discussion paper focuses on understanding how nurses deliver spiritual care in Italian prisons where there are often limited resources and where organizational priorities hinder the provision of holistic nursing. This paper draws from a previous qualitative research study that the authors had conducted. In this study, they observed that prison nurses reported that they experienced many difficulties related to the provision of holistic care to prisoners. This was particularly true for spiritual care in vulnerable forensic patients, such as older individuals, and physically and mentally frail prisoners. Prison officers did not allow nurses to just “listen and talk” to their patients in prison, because they considered it a waste of time. The conflict between prison organizational constraints and nursing goals, along with limited resources placed barriers to the development of therapeutic relationships between nurses and prisoners, whose holistic and spiritual care needs remained totally unattended. Therefore, prison organizational needs prevailed over prisoners’ needs for spiritual care, which, while fundamental, are nevertheless often underestimated and left unattended. Educational interventions are needed to reaffirm nurses’ role as providers of spiritual care.

Barnett, Jeffrey E. 2016. Are Religion and Spirituality of Relevance in Psychotherapy? *Spirituality in Clinical Practice* 3(1). (Ethical Standards on Spiritual Awareness in Psychotherapy). 5–9. doi:10.1037/scp0000093.

Are religion and spirituality of relevance in psychotherapy? Reasons why they are relevant are addressed and information is shared to illustrate their great importance in many clients’ lives and why they are relevant to the psychotherapy process. Recommendations regarding how psychotherapists advertise their services, informed consent, clinical competence, cultural competence, and boundaries and multiple relationships are provided so that psychotherapists may fulfill their ethical obligations to provide clients with the most relevant and efficacious treatment possible.

Bornet, Marc-Antoine, Etienne Rochat, Anne-Veronique Duerst, Sarah Fustinoni, Christophe Buela, Armin von Gunten & Stefanie Monod. 2016. Instruments to Assess Depressive Symptoms and Spiritual Distress Investigate Different Dimensions. *Clinical Gerontologist* 39(2). 104–116. doi:10.1080/07317115.2015.1120255.

Although affective and spiritual states may share some common clinical features, the precise nature of the relationship between depression and spirituality is still unclear. Researchers tested the hypothesis that two instruments that measure depressive symptoms and spiritual distress describe similar dimensions. Patients admitted to geriatric rehabilitation (n=185) had depressive symptoms assessed with the 15-item Geriatric Depression Scale (GDS-15) and spiritual distress evaluated with the Spiritual Distress Assessment Tool (SDAT). Results: A principal components analysis pooling GDS-15 and SDAT resulted in a 6-factor solution, with only one factor shared by both dimensions.

Calder, Andy S. & Jan E. Morgan. 2016. “Out of the Whirlwind”: Clinical Pastoral Education and Climate Change. *The Journal of Pastoral Care & Counseling: JPCC* 70(1). 16–25. doi:10.1177/1542305015621707.

This article traces the development of an innovative program of Clinical Pastoral Education (CPE), conducted in 2013 in Victoria, Australia. Interns were placed in environmental contexts; the program’s aim was to enhance the eco-ministry identity of interns as they attended to the anxieties and concerns of people affected by ecological change, as well as listening to the cries and groans of Earth. In this sense, pastoral care acknowledges the environment and

our human presence within it as of religious and spiritual concern. The theological and supervisory rationales of the program are outlined and include a careful alignment of parallel competencies with the existing objectives and standards required for accreditation. Guidelines for sacred practice in nature, place/case study and the more-than-human verbatims are described, and an illustrative example of such a verbatim is also included.

- Catania, Gianluca, Annamaria Bagnasco, Milko Zanini, Giuseppe Aleo & Loredana Sasso. 2016. Spiritual Assessment within Clinical Interventions Focused on Quality of Life Assessment in Palliative Care: A Secondary Analysis of a Systematic Review. *Religions* 7(3). doi:10.3390/rel7030025.

One of the most crucial palliative care challenges is in determining how patients' needs are defined and assessed. Although physical and psychological needs are commonly documented in patient's charts, spiritual needs are less frequently reported. The aim of this review was to determine which explicit, longitudinal documentation of spiritual concerns would sufficiently affect clinical care to alleviate spiritual distress or promote spiritual wellbeing. A secondary analysis of a systematic review originally aimed at appraising the effectiveness of complex interventions focused on quality of life in palliative care was conducted. Five databases were searched for articles reporting interventions focused on QoL including at least two or more QoL dimensions. A narrative synthesis was performed to synthesize findings. In total, 10 studies were included. Only three studies included spiritual wellbeing assessment. Spirituality tools used to assess spiritual wellbeing were different between studies: Hospital QoL Index 14; Spiritual Needs Inventory; Missoula-Vitas QoL Index; and the Needs Assessment Tool: Progressive Disease-Cancer. Only one study reported a healthcare professional's session training in the use of the QoL tool. Two out of three studies showed in participants an improvement in spiritual wellbeing, but changes in spiritual wellbeing scores were not significant. Overall patients receiving interventions focused on QoL assessment experienced both improvements in their QoL and in their spiritual needs. Although spiritual changes were not significant, the results provide evidence that a spiritual need exists and that spiritual care should be appropriately planned and delivered. Spiritual needs assessment precedes spiritual caring. It is essential that interventions focused on QoL assessment in palliative care include training on how to conduct a spiritual assessment and appropriate interventions to be offered to patients to address their spiritual needs.

- Chandramohan, Sandhya & Raisuyah Bhagwan. 2016. Utilization of Spirituality and Spiritual Care in Nursing Practice in Public Hospitals in KwaZulu-Natal, South Africa. *Religions* 7(3). doi:10.3390/rel7030023.

This study explored the views of professional nurses in KwaZulu-Natal, South Africa regarding the role of spirituality and spiritual care in nursing practice and investigated whether professional nurses utilize spiritually based care in nursing practice. A cross-sectional descriptive design using multistage random sampling was utilized. Five hundred and fifty questionnaires were distributed to professional nurses between December 2012 and February 2013. A total of 385 participants completed the survey questionnaire, resulting in a 77% response rate. Data was analyzed using SPSS 0.20. The data revealed that nurses see spirituality and spiritual care as an important dimension of nursing practice but need greater preparedness. Nurses need to be effectively prepared to deal with the complexity of providing ethically based personalized spiritual care in an increasingly diverse society.

- Curry, Janel, Margaret McCallum & Jorge Juan Rodriguez V. 2016. Spiritual Care Education and Rural Systems in Swan River. *Journal of Pastoral Care & Counseling: JPCC* 70(1). 53–62. doi:10.1177/1542305015619631.

The provision of spiritual care, and the training of spiritual care providers, must be embedded within the larger systems (economic, social, generational, and environmental) and communities within which clients reside. This study analyzes the results of a systems approach to CPE training that focused on the rural context of Swan River, Manitoba. It addresses the need for new approaches to contextualizing CPE training and for understanding the uniqueness of rural contexts in particular.

Freedman, Suzanne & Tiffany Zarifkar. 2016. The psychology of interpersonal forgiveness and guidelines for forgiveness therapy: What therapists need to know to help their clients forgive. *Spirituality in Clinical Practice* 3(1). 45–58.

doi:10.1037/scp0000087.

In recent years, forgiveness research, education, and therapy have received a great deal of theoretical and empirical attention. Past research illustrates the potential benefits of and interest in forgiveness therapy. Misunderstandings and misconceptions about what it means to forgive are linked to criticism aimed at the use of forgiveness therapy and education. The 3-fold purpose of the current study is to explain the value of forgiveness as a therapeutic approach, address misconceptions of forgiveness and forgiveness therapy, and describe a model of forgiveness that has been used effectively with a variety of populations.

Hathaway, William L. 2016. Ethical engagement with spirituality in clinical practice: Managing bias. *Spirituality in Clinical Practice* 3(1). (Ethical Standards on Spiritual Awareness in Psychotherapy). 14–17.

doi:10.1037/scp0000100.

A systematic bias leading to clinically and ethically problematic neglect of spirituality in the mental health professions is discussed. Relevant data suggesting the presence of this bias are reviewed and the form the bias often takes in practice is illustrated through a composite case example. Levinas's (2000) notion of alterity is used as a tool to conceptualize more appropriate engagement of spirituality in practice. Two opposite problems may arise around these issues: A clinician may impose their own spiritual biases on clients or they may fail to adequately appreciate the role of the client's own spiritual orientation in the clinical formulation. The importance of a systematic bias correction is explored.

Hershey, Megan. 2016. Understanding the Effects of Faith: A Comparison of Religious and Secular HIV Prevention NGOS in Kenya. *Journal of International Development* 28(2). 161–176.

doi:10.1002/jid.3075.

Religious non-governmental organizations (NGOs) are active in development efforts, yet the role faith plays in these organizations and its effects on programs remains unclear. Drawing on evidence from a study of Kenyan NGOs, the author finds that faith rarely emerges in the programs of Christian religious NGOs. She argues that both secular and religious NGOs are constrained by donor restrictions and a need for legitimacy that simultaneously remove religious elements from religious NGOs and promote minimal religious practices within secular organizations. The second half of the article discusses the nuanced ways in which faith does manifest within the organizational characteristics and practices of NGOs.

Johnson, W. Brad. 2016. Challenging Clinically Salient Religion: The Art of Respectful Confrontation. *Spirituality in Clinical Practice* 3(1). (Ethical Standards on Spiritual Awareness in Psychotherapy). 10–13.

doi:10.1037/scp0000099.

The author begins by reflecting on a therapy training session he participated in with 10 group therapy clients. The psychotherapist in this session was Albert Ellis, the father of rational emotive behavior therapy (REBT), and who was, on that day 20 years ago, the author's supervisor during a summer fellowship at the Albert Ellis Institute. As a former seminary student and a proponent of religiously integrative or accommodative interventions, the author recalls admiring the ease with which Ellis used elements of one of the client's own religious faith to question and challenge the client's singular focus on only one element. This confrontation was delivered in a spirit of kindness and collaborative empiricism; Ellis hoped that by providing evidence that contradicted the group member's selective interpretation of scripture, he might bring the client some measure of relief from his clinical distress. The author then explores cases when a client's religious beliefs are clinically salient. He notes that in addition to Albert Ellis, a

formative influence in his own thinking about how to best respond to clinically salient religion is Charles Ridley. Chuck is a highly regarded expert in multicultural counseling and a proponent of culturally competent confrontation. The article concludes with the author exploring Ridley's perspective on the counseling microskill of cultural confrontation and also address the critical importance of approaching clinically salient religious beliefs with a spirit of cultural humility.

- Koenig, Harold G., Bruce Nelson, Sally F. Shaw, Salil Saxena & Harvey Jay Cohen. 2016. Religious Involvement and Adaptation in Female Family Caregivers. *Journal of the American Geriatrics Society* 64(3). 578–583.
doi:10.1111/jgs.13929.

This study examined the relationship between religious involvement (RI) and adaptation of women caring for family members with severe physical or neurological disability. A convenience sample of 251 caregivers was recruited. RI and caregiver adaptation (assessed by perceived stress, caregiver burden, and depressive symptoms) were measured using standard scales, along with caregiver characteristics, social support, and health behaviors. Bivariate and multivariate analyses were conducted to identify relationships and mediating and moderating factors. Religious involvement (RI) was associated with better caregiver adaptation independent of age, race, education, caregiver health, care recipient's health, social support, and health behaviors. This association was strongest in caregivers aged 58-75 and spouses and for perceived stress in blacks.

- Lasair, Simon. 2016. Ethics, Politics, and Religion in Public Health Care: A Manifesto for Health Care Chaplains in Canada. *The Journal of Pastoral Care & Counseling: JPCC* 70(1). 63–69.
doi:10.1177/1542305015619888.

Health care chaplaincy positions in Canada are significantly threatened due to widespread health care cutbacks. Yet the current time also presents a significant opportunity for spiritual care providers. This article argues that religion and spirituality in Canada are undergoing significant changes. The question for Canadian health care chaplains is, then: how well equipped are they to understand these changes in health care settings and to engage them? This article attempts to go part way toward an answer.

- Lomax, James W. & Nathan Carlin. 2016. Utilizing religious and spiritual material in clinical care: Two cases of religious mourning. *Spirituality in Clinical Practice* 3(1). 59–68.
doi:10.1037/scp0000088.

This article integrates a way of thinking about the origin of religiosity with how religious and spiritual resources get utilized in adaptation to a significant life stressor. It provides an example for clinicians of using spiritually integrated psychotherapy to help patients appreciate and nurture resources that they may be reluctant to share with health care practitioners. The novelty of certain religious experiences, especially in the context of acute and severe loss, is rarely addressed in the professional education of most mental health practitioners. Some religious experiences are characterized as “paranormal” and are often dismissed in professional education as mystical or unscientific. This may make certain types of religious coping less valuable and accessible to people in extreme need.

- Mason, Karen, Monica Geist, Richard Kuo, Day Marshall & James D. Wines. 2016. Predictors of Clergy's Ability to Fulfill a Suicide Prevention Gatekeeper Role. *The Journal of Pastoral Care & Counseling: JPCC* 70(1). 34–39.
doi:10.1177/1542305016631487.

Catholic, Jewish and Protestant clergy (n=801) completed a survey to identify predictors of clergy's ability to fulfill a suicide gatekeeper role. Exploratory backward stepwise regression identified predictors of risk identification including suicide knowledge, religion, conducting suicide funerals, having an attitude that people have a right to die, age, and race. Predictors of ability to intervene include suicide knowledge, training, religion, right to die attitude, and ethnicity. Recommendations include more suicide training and clergy self-care.

McArthur, Caitlin, Judi Laprade & Lora M. Giangregorio. 2016. Suggestions for Adapting Yoga to the Needs of Older Adults with Osteoporosis. *Journal of Alternative and Complementary Medicine* 22(3). 223–226.

doi:10.1089/acm.2014.0397.

Exercise such as yoga may have health benefits for older adults with osteoporosis, but without attention to safe movement yoga can also increase the risk for injury. The current article provides suggestions for how to adapt yoga to the needs of older adults with osteoporosis. A general guideline for exercise is that older adults with osteoporosis should participate in a multicomponent exercise program, including resistance and balance training. Contraindicated movements include end-range flexion/extension/rotation of the spine and internal/external rotation of the hip. Yoga postures that should be encouraged include postures emphasizing spinal alignment and extension to mid-range in standing and on the floor. Overarching considerations for participation in yoga are that classes should be designed for higher-risk older adults, led by an instructor who has had proper training with individuals with osteoporosis, should be a noncompetitive environment, and should give attention to which postures are safe and how to transition safely.

Miller, Andrew J. 2016. The Spiral Staircase: A Narrative Approach to Pastoral Conversation. *The Journal of Pastoral Care & Counseling: JPCC* 70(1). 26–33.

doi:10.1177/1542305015619884.

This article is a patient-centered pastoral conversation paradigm to be used by chaplains, pastors, or any other spiritual care provider, in engaging in healing conversation with patients, clients, or parishioners. It is based on the intimate, interpathic incarnation of oneself into another's story.

Musa, Ahmad S. 2016. Factor Structure of the Spiritual Well-Being Scale: Cross-Cultural Comparisons Between Jordanian Arab and Malaysian Muslim University Students in Jordan. *Journal of Transcultural Nursing* 27(2). 117–125.

doi:10.1177/1043659614537305.

This study reported the differences in factor structure of the Spiritual Well-Being Scale (SWBS) among Jordanian Arab and Malaysian Muslim participants and further examined its validity and reliability. A convenience sample of 553 Jordanian Arab and 183 Malaysian Malay Muslim university students was recruited from governmental universities in northern Jordan. The findings of this study revealed that this scale consists of two factors for the Jordanian Arab group, representing the “Religious Well-Being” and the “Existential Well-Being” subscales, and consists of three factors for the Malaysian group, representing the “Affiliation/Meaning and Purpose,” “Positive Existential Well-Being/God Caring and Love,” and “Alienation/Despair” subscales. In conclusion, the factor structure of the SWBS for both groups in this study was psychometrically sound with evidence of acceptable to good validity and reliability. Furthermore, this study supported the multidimensional nature of the SWBS and the earlier notion that ethnicity shapes responses to this scale.

Nascimento, Lucila C., Willyane A. Alvarenga, Silvia Caldeira, Tamisa M. Mica, Fabiane C. S. Oliveira, Raquel Pan, Tabatha F. M. Santos, Emilia C. Carvalho & Margarida Vieira. 2016. Spiritual Care: The Nurses' Experiences in the Pediatric Intensive Care Unit. *Religions* 7(3).

doi:10.3390/rel7030027.

Physical aspects of disease management are often more evident than those related to spirituality or spiritual care. Spirituality may appear more crucial in pediatric intensive care units (PICUs) when patients are experiencing serious illness or end-of-life situations. This paper describes the meaning of spirituality according to nurses who had worked in PICUs and how they provide spiritual care to children and their families. It is an exploratory research using a qualitative approach, including interviews with eleven PICU nurses. Data were analyzed using thematic analysis. Two themes were identified: meanings of spirituality and religiosity according to nurses, and the provision

of spiritual care to children in the PICU and their families. The interviewed nurses recognized the importance and value of spiritual care and are aware that spiritual needs are considered to be of significantly less importance than physical treatments. Spiritual care was mainly focused on the children's families; the nurses justified the absence of spiritual care to children, based on lack of time and children's age and level of consciousness. These results highlight a deficiency in spiritual care in PICUs and demonstrate the need for improved knowledge and demonstrate the need to not only raise awareness of the spiritual dimension of children, adolescents, and their families, but also to enhance discussion and improve general knowledge on the importance of spirituality in the treatment regimen to provide effective holistic care.

Park, Irene Yung. 2016. "Paramedical" Healing in Hospitals: The Expansion of Spiritual Care in Seoul. *The Journal of Pastoral Care & Counseling: JPCC* 70(1). 43–52.
doi:10.1177/1542305015622636.

Emotional and spiritual healing stand at the center of the activity of Catholic pastoral caregivers attending to the sick in non-Catholic hospitals in Seoul. In this paper the author explores how these agents understand their practice as part of a holistic human healing, positioning their work side by side with medical healing. She also examines how their role is both confirmed and challenged against the backdrop of the growing commercialization of the health care industry under the neoliberal paradigm.

Rubin, Jeffrey B. 2016. Meditative Psychoanalysis. *American Journal of Psychoanalysis* 76(1). 54–70.
doi:10.1057/ajp.2015.59.

Psychoanalysis and meditation not only compensate for the other's blind spots, but also, when practiced together, can provide a richer experience than either discipline pursued alone. After considering the way meditation cultivates heightened attentiveness, refines sensory clarity, lessens self-criticism, and increases affect tolerance, thereby deepening psychoanalytic listening, the author examines how psychoanalytic perspectives on unconscious communication and meaning illuminate and transform the nearsightedness of meditation, aiding therapists and clients in understanding troubling thoughts, feelings, and behavior. This helps therapists deepen their capacity to help those people with whom they work. The paper also attempts to illuminate how the therapeutic relationship, conceived of in a freer and more empathic way-as the vehicle for both validating a person's experience and providing opportunities for new forms of relatedness and self-transformation-provides a crucible in which old and dysfunctional ways of caring for oneself and relating to other people emerge and new patterns of self-care and intimacy can be established. In the concluding section, the author delineates meditative psychoanalysis, an integration of meditation and psychoanalysis.

Shafranske, Edward P. 2016. Finding a Place for Spirituality in Psychology Training: Use of Competency-Based Clinical Supervision. *Spirituality in Clinical Practice* 3(1). (Ethical Standards on Spiritual Awareness in Psychotherapy). 18–21.
doi:10.1037/scp0000098.

Psychologists are required to perform professional services in accordance with American Psychological Association's (2010) Ethical Principles of Psychologists and Code of Conduct and policy regarding evidence-based practice. In light of these mandates, clinical competence includes the ability to take into consideration individual differences and client characteristics, context and preferences, including the contributions of religion and spirituality, in the practice of psychology. A review of the literature suggests that psychologists generally receive little education and training in the applied psychology of religion and spirituality, which calls into question the adequacy of their preparation. However, through the use of competency-based clinical supervision, competence can be enhanced through attention to the knowledge, skills, and attitudes that are assembled to conduct psychological treatment that is sensitive to the religious and spiritual beliefs, values, and commitments of patients.

Sperry, Len. 2016. Varieties of Religious and Spiritual Treatment: Spirituality Oriented Psychotherapy and Beyond. *Spirituality in Clinical Practice* 3(1). 1–4.

doi:10.1037/scp0000097.

As mental health clinicians become more sensitive to the spiritual and religious concerns of clients, they are faced with the challenge of how to best respond to these concerns. Performing a spiritual assessment does not mean that clinicians can or should provide spirituality oriented psychotherapy. Because of the limits of scope of practice, the expectation is that all clinicians will respond in a spiritually sensitive manner when they do not have the requisite training and experience to provide spirituality oriented psychotherapy or other religious or spiritual treatments. Accordingly, these practitioners may collaborate or refer to professionals with such training and experience. To increase familiarity with these other religious and spiritual treatments, this article briefly describes these various treatments and scope of practice considerations. Some implications for spiritually sensitive clinical practice and research are then noted.

Tang, Yi-Yuan & Leslie D. Leve. 2016. A translational neuroscience perspective on mindfulness meditation as a prevention strategy. *Translational Behavioral Medicine* 6(1). 63–72.
doi:10.1007/s13142-015-0360-x.

Mindfulness meditation research mainly focuses on psychological outcomes such as behavioral, cognitive, and emotional functioning. However, the neuroscience literature on mindfulness meditation has grown in recent years. This paper provides an overview of relevant neuroscience and psychological research on the effects of mindfulness meditation. The authors propose a translational prevention framework of mindfulness and its effects. Drawing upon the principles of prevention science, this framework integrates neuroscience and prevention research and postulates underlying brain regulatory mechanisms that explain the impact of mindfulness on psychological outcomes via self-regulation mechanisms linked to underlying brain systems. They conclude by discussing potential clinical and practice implications of this model and directions for future research.

Timmins, Fiona, Maryanne Murphy, Silvia Caldeira, Eimear Ging, Carole King, Vivienne Brady, Jacqueline Whelan, et al. 2016. Developing Agreed and Accepted Understandings of Spirituality and Spiritual Care Concepts among Members of an Innovative Spirituality Interest Group in the Republic of Ireland. *Religions* 7(3).
doi:10.3390/rel7030030.

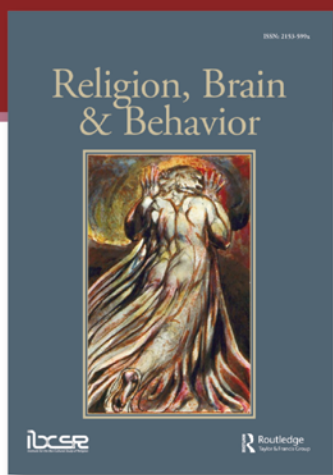
A Spirituality Interest Group (SIG) was set up in in the School of Nursing and Midwifery, Trinity College Dublin, Republic of Ireland (ROI), in March 2013. This paper reports on some of the journey and requirements involved in developing the group. It highlights the essential work of establishing agreed understandings in an objective way in order for the group to move forward with action. These agreed understandings have contributed to the group's success. Outlining the group's journey in arriving at agreements may be of use to others considering creating similar groups. One key action taken to determine the suitability of the group's aims and terms of reference was the distribution of a Survey Monkey to group members (n=28) in 2014. One early meeting of the group discussed future goals and direction using the responses of this anonymous survey. This paper reports on the results of the survey regarding the establishment of the SIG and the development of a shared understanding of spiritual care among the members. There is consensus in the group that the spiritual care required by clients receiving healthcare ought to be an integrated effort across the healthcare team. However, there is an acceptance that spirituality and spiritual care are not always clearly understood concepts in practice. By developing shared or at least accepted understandings of spirituality and spiritual care, SIG hopes to be able to underpin both research and practice with solid foundational conceptual understanding, and in the process also to meet essential prerequisites for achieving the group's aims.

Wahbeh, Helané, Elena Goodrich & Barry S. Oken. 2016. Internet-based Mindfulness Meditation for Cognition and Mood in Older Adults: A Pilot Study. *Alternative Therapies in Health & Medicine* 22(2). 44–53.

Older adults are at risk for greater chronic stress and cognitive decline. Training in mindfulness meditation (MM) may help reduce stress and, thus, cognitive decline in older adults, but little research has explored that hypothesis. The current study's primary aim was to evaluate the feasibility and acceptability for use by older adults of the Internet Mindfulness Meditation Intervention (IMMI), a program that had been developed by the research team, as well as of an Internet-based health-and-wellness education program, the control. The secondary aim was to collect preliminary pre- and postintervention data on mood and cognitive function. The study was a randomized, controlled trial (RCT), a pilot study, with participants randomized either to the meditation group or the education group. Participants were older adults aged 65-90 y, recruited from the Portland, OR, metropolitan area. Twenty-one people enrolled in the study. Participants in both groups took part in a 1-h online session each week for 6 wk, with 30 min of daily home practice. Sixteen participants completed the study, 8 in each group, and 5 dropped out, for a 76% completion rate. Participants' mean age was 76.2 y; 88% were Caucasian, and 50% were female. Acceptability was high for the interventions, based on above-average scores on the client satisfaction questionnaire. The IMMI participants completed (1) 4.25 ± 2.4 sessions, with a range of 0-6; (2) 604 ± 506 home-practice minutes, with a range 0-1432; and (3) 21.3 ± 15.5 d of practice, with a range of 0-46. The education group completed (1) 4.75 ± 1.8 sessions, with a range of 2-6; (2) 873 ± 395 home-practice minutes, with a range of 327-1524; and (3) 25.6 d of practice, with a range of 11-35. The intervention and control formats were both feasible, and the control group was appropriate. As expected due to the pilot nature of the study, no differences existed between groups for the mood or cognitive outcomes. The authors conclude that administering interventions via the Internet to older adults is feasible. The 2 interventions were acceptable to participants and equal with regard to perceived credibility and acceptability. Future RCTs are planned to evaluate the clinical efficacy of the 2 interventions.

Wu, Li-Fen, Hui-Chen Tseng & Yu-Chen Liao. 2016. Nurse education and willingness to provide spiritual care. *Nurse Education Today* 38. 36–41.
doi:10.1016/j.nedt.2016.01.001.

Spiritual care is a critical part of holistic care, and nurses require adequate preparation to address the spiritual needs of patients. However, nurses' willingness to provide such care has rarely been reported. Hence, nurses' education, and knowledge of spiritual care, as well as their willingness to provide it require further study. A convenience sample of 200 nurses participated in the study. Quantitative data were collected using a 21-item Spiritual Care Needs Inventory. The majority of participants were female (96.5%, n=193) between 21 and 59 years old. Regarding religious beliefs, 63 (31.5%) had no religious belief, and 93 (46.5%) did not engage in any religious activity. Overall, the nurses were willing to provide spiritual care, although only 25 (12.5%) felt that they had received adequate education.



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PART 3: BOOKS

3.1 SCIENTIFIC STUDY OF RELIGION, BRAIN, AND BEHAVIOR

Engelhardt, Jeffers & Philip Vilas Bohlman (eds.). 2016. *Resounding transcendence: transitions in music, ritual, and religion*. New York, NY: Oxford University Press.

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